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ABSTRACT

The study compared the academic achievement of 59 recent Mexican immigrant and 59 native-born Mexican American junior high school students in Nogales, Arizona. Three different types of variables were investigated: measures of student achievement, family background factors, and acculturative stress variables. Data were obtained from the school records, the Family Background Questionnaire, the Self-Esteem Inventory, and the Intellectual Achievement Responsibility Questionnaire. The study revealed that, contrary to prior research and the general expectation of Southwest educators, the academic achievement of recent Mexican immigrants was not better than that of second or third generation Mexican American students. Furthermore, the recent immigrants experienced more acculturative stress and scored lower on four family background variables (father's educational level and present occupational status, mother's educational level, and parental stress or education). The most consistent predictors of educational level and present occupational status, and student's self-concept. The differences between the groups were not attributable to chronological age or length of schooling in the United States, but sex differences were important to the sociocultural and psychocultural factors. Larger scale studies in urban and rural areas more remote from the Mexican border are recommended as is a study of the extent to which teachers believe recent immigrants achieve better. (SE)

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ACHIEVEMENT LEVELS AMONG FOREIGN-BORN AND NATIVE-BORN MEXICAN AMERICAN STUDENTS

DAVID P. BARAL

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CHAPTER 1

INTRODUCTION

The passage of the Bilingual Education Act in 1968 was a landmark in the history of educational programs designed to meet the needs of children who come from environments where English is not the dominant language. Considerable experimentation has been stimulated by the substantial amounts of federal funding available under Title VII, and many school districts in the Southwest have begun to develop bilingual education programs for their Mexican American students. These innovative programs have generated much interest among educators and the public at large, and they have, in some communities, sparked lively controversies.

While the efforts to develop new programs continue, certain basic problems remain. One of the most fundamental issues is the lack of reliable information about the characteristics of the Mexican American learner which derive from his Mexican cultural heritage and his participation in the Mexican American culture of the United States. An accurate description of the target population is essential to the development of any new program.

Background of the Study

Many descriptions of Mexican American culture are based on research conducted in remote and easily studied communities. Particularly influential have been the theoretical orientation of Parsons (1951) and the empirical studies of Madsen (1964) and Kluckhohn and Strodtbeck (1961).

Madsen (1964) conducted his field work in a small, rural community in the Rio Grande Valley of South Texas, and he (1964, p. 2) described the "traditional folk culture" of the community which came "directly from Mexico" and was "little changed by its setting in the United States."

Kluckhohn and Strodtbeck (1961) studied the value orientations of Mexican Americans in a remote and isolated village in northern New Mexico. They found that the Mexican Americans in their sample were oriented toward the present rather than the future, were concerned with being rather than doing, and viewed nature in terms of subjugation rather than mastery. Kluckhohn and Strodtbeck (1961, p. 335) concluded that the value orientation system of Mexican Americans was, in most respects, a "mirror image" of the dominant American culture.

The cultural patterns described by Madsen and Kluckhohn and Strodtbeck as characteristic of isolated, agrarian communities have often been overgeneralized to the entire Mexican American population (see Zintz 1963 and Burger 1971), thus giving rise to a false impression concerning the homogeneity of the

Mexican American people (Grebler, Moore, and Guzmán 1970). Casavantes (1969) and Palomares (1970) have criticized the widespread tendency to describe the contemporary Mexican American population in terms of a "traditional folk culture," and have argued that the continuing use of such descriptors has led to the maintenance of inaccurate stereotypes concerning Mexican Americans.

More recently, a new series of stereotypes has been advanced in rebuttal to the former ones. Garcia (1974, pp. 150-51) has stated that "Chicanos themselves are eager to give the Anglo a generalized, static description of Chicano culture, romantic in nature and unrealistic at best . . . . Universal positive attributes have been substituted for universal negative ones."

Unrealistic positive stereotypes will be no more helpful than inaccurate negative stereotypes in designing new educational programs for the Mexican American learner. What is needed is more accurate information concerning the cultural background of Mexican American children and the ways in which cultural factors are related to the academic achievement of these students.

Statement of the Problem

Each year many new students enter southwestern schools directly from Mexico. Since these immigrant students have been socialized in an entirely different cultural milieu, one would expect that they would experience many difficulties in adapting to American schools and would not do well academically. However,

there is some evidence which suggests that recent Mexican immigrants achieve better than second or third generation Mexican Americans.

Carter's (1970) survey of four southwestern states indicated that many teachers and school administrators believed that children entering their schools directly from Mexico achieved better than the average local Mexican American. Carter (1970, pp. 20-21) stated that "school personnel are often particularly proud of the performance of such children, who seem to learn English rapidly and well. The older the immigrant is, the better he appears to do in school."

Although Carter presented no empirical data on achievement levels, Kimball (1968) found that foreign-born students achieved better than native-born Mexican Americans. Anderson and Johnson (1971) also found that students born in Mexico achieved as well as, or better than, most second or third generation Mexican Americans.

The results of these two studies should be interpreted with caution. Kimball (1968) described his own finding as "unexpected," one minor conclusion in a complex study involving many variables. Anderson and Johnson (1971) included very few foreign-born Mexican Americans (N = 14) in their sample. Since no studies designed to test the hypothesis that recent Mexican immigrants achieve better than native-born students have been reported, it is important to seek further empirical verification on this question.

A number of possible explanatory factors have been suggested to account for the relatively high academic achievement of recent immigrant students. It has been argued that the immigrant students may have come from middle class or upwardly mobile homes, that these students may have "learned how to study" in the Mexican education system, or that American teachers may have had high expectations for their "foreign students" (see Carter 1970, p. 21). It has also been suggested that early instruction in the home language of the child, received in Mexico, may have had strong transfer effects to later schooling in the United States (see Modiano 1968).

These post hoc explanations are speculative in nature, since no empirical studies have been undertaken to investigate possible correlates of academic achievement among recent immigrant students. However, they do serve to identify factors which could be studied in future research.

The foregoing analysis demonstrates that the academic achievement of recent Mexican immigrants has not been adequately studied. The problems are both empirical and conceptual. It would appear that a generalized expectancy exists, among educators in the Southwest, that recent immigrants from Mexico achieve better than second or third generation Mexican American students. However, empirical support for this expectancy is limited, and no adequate theoretical rationale has been advanced which would account for the relatively high achievement of recent immigrant students.

Purpose of the Study

The major purpose of this study was to determine if there were differences in academic achievement between recent Mexican immigrants and native-born Mexican Americans at the junior high school level. A secondary purpose was to investigate selected factors which may have been related to the academic achievement of each group. The study focused on two types of non-intellectual correlates of student achievement: sociocultural family background factors and psychocultural variables relating to the process of acculturation.

Importance of the Problem

Most recent research on the achievement of Mexican American students has been concerned with the characteristics which these children may demonstrate as a group, and relatively little attention has been paid to variations within this group (Hernandez 1973). Previous studies which compared the achievement of Mexican Americans and other groups may have obscured significant patterns of intragroup variation.

In view of the retarded academic performance of Mexican American children in general (Coleman et al. 1966, Grebler, Moore, and Guzmán 1970), it is important to identify groups of students within this population who attain higher achievement levels and to explore possible reasons for their success. If patterns of intragroup variation in academic achievement can be identified and systematically related to other variables, we may

gain valuable insights into the reasons why Mexican Americans succeed or fail in school.

Research Hypotheses and Questions

The research hypotheses investigated in this study were:

H_1--Recent Mexican immigrants attain higher levels of academic achievement than native-born Mexican American students.

H_2--Recent Mexican immigrants undergo less acculturative stress than native-born Mexican American students.

H_3--Recent Mexican immigrants rank higher than native-born Mexican American students on the following variables: parents' education level, father's present occupational status, and parental stress on education.

In addition to these hypotheses, the following questions were investigated:

Q_1--Do recent immigrants tend to come from urban rather than rural areas of Mexico?

Q_2--Do the fathers of recent immigrant children tend to come from the skilled labor and white collar sectors of Mexican society?

Q_3--Which family background variables and acculturative stress variables correlate with the academic achievement of recent Mexican immigrants and native-born Mexican American students?

Definitions

Recent Mexican Immigrants

For the purposes of this study, recent Mexican immigrants were defined as students born in Mexico who had at least two years of education in Mexican schools before emigrating to the United States. Students entering American schools during the 1974 and 1975 calendar years were excluded from the study because of the problems of initial foreign language learning.

Native-Born Mexican Americans

Students born in the United States and residing in this country for the entire period of their schooling were defined as native-born Mexican Americans.

Academic Achievement

Four measures of student achievement were investigated in this study: (a) total grade point average, (b) grade point average in academic subjects (English, social studies, mathematics, and science), (c) scores on the Reading Comprehension Test of the Advanced Battery of the Stanford Achievement Test, and (d) scores on the Mathematics Computation Test of the same instrument.

Family Background Variables

The following family background variables were investigated as possible correlates of academic achievement: (a) father's education level, (b) mother's education level,

(c) father's present occupational status, (d) mother's occupational status, (e) home usage of the English language, (f) parental stress on education, (g) family size, and (h) birth order of the students. These variables were measured by the Family Background Questionnaire (see Appendix A) developed for use in this study.

Acculturative Stress

In this study acculturative stress was defined as a basic role conflict or identity crisis produced by the conflicting norms and expectations of two cultural systems. The effects of acculturative stress were assessed on two dimensions: the child's self-concept, and his sense of control over the environment. Self-concept was operationally defined in terms of Coopersmith's (1967a) Self-Esteem Inventory (SEI), and control over the environment was measured by the Intellectual Achievement Responsibility (IAR) questionnaire developed by Crandall, Katkovsky, and Crandall (1965).

Overview of the Methodology

This study was conducted at the Wade Carpenter Junior High School in Nogales, Arizona during the second semester of the 1974-75 school year. The experimental group of recent immigrant students included all students enrolled in the school who fully met the selection criteria: (a) Mexican birth, (b) at least two years of education in Mexico, and (c) emigration to the United

States before 1974. A control group composed of Mexican American students born in this country was randomly selected from the same junior high school. The sample included 118 seventh and eighth grade students: 59 recent immigrants (31 males and 28 females) and 59 native-born students (29 males and 30 females).

The investigator administered the Family Background Questionnaire, the Coopersmith SEI, and the Crandall IAR to the sample in groups of 12 students. The questions were read aloud to the students as they marked their responses. The students' grades were secured from the school records, and grade point averages were computed from grades received during the first semester of the 1974-75 school year. The Stanford Achievement test was administered as part of the institutional testing program in April 1975. All instruments and data collection were in English.

Data analysis procedures included the comparison of the group means of recent immigrants and native-born students on the dependent measures of student achievement, acculturative stress, and the family background factors. Correlational analysis was used to investigate factors related to student achievement.

Assumptions

This study was based on three assumptions deriving from the specific instruments and methodologies employed:

1. That accurate information on family background variables could be obtained by administering a questionnaire to students at the junior high school level.

2. That the Coopersmith and Crandall inventories were valid indicators of the personality variables they purport to measure.

3. That the reading comprehension level in English of the students in the sample was sufficiently high not to invalidate the use of written questionnaires and inventories.

Limitations

Since this was an exploratory study, a number of factors limited the generalizability of the findings:

1. Only one level of schooling, the junior high school, was investigated.

2. The students in the sample came from a single, urban school district located on the Mexican border.

3. The influence of neighborhood factors and school climate was not considered.

4. Teacher background characteristics and attitudes, and teaching methods, were not investigated.

Summary

The problematic situation concerning the academic achievement of recent immigrants from Mexico was described and analyzed in this chapter. Among educators in the Southwest, there exists a generalized expectancy that recent Mexican immigrants achieve

better than second or third generation Mexican Americans. However, the empirical support for this expectancy is limited, and no adequate theoretical rationale has been proposed which would explain the relatively high academic achievement of students who have recently emigrated from Mexico.

The present study was undertaken to determine if there were differences in academic achievement between recent immigrants and native-born Mexican Americans at the junior high school level, and to investigate selected factors which may have been related to the achievement of each group. The study focused on two types of non-intellectural correlates of student achievement: sociocultural family background factors and psychocultural variables relating to the process of acculturation.

In contrast to previous research devoted to intergroup comparisons between Mexican American students and other groups, this study was concerned with intragroup variation. It was argued that the study of intragroup differences may provide valuable insights into the reasons why Mexican American children succeed or fail in school.

CHAPTER 2

REVIEW OF RELATED LITERATURE

The theoretical orientations and empirical findings which have influenced the formulation of the present research problem and guided the conduct of the study are examined in this chapter. The literature reviewed reflects three major areas: (a) studies relating to Mexican immigration, (b) anthropological theories of culture change and individual adaptation to acculturation, and (c) selected factors which have been shown to be related to the achievement of Mexican American learners.

The review of the literature on Mexican immigration focuses on the sociocultural characteristics of the immigrants and examines the possible implications of changes over time in the migration patterns. The analysis of anthropological theories of culture change provides a general theoretical context in which to view the problem of the academic achievement of Mexican American students. The major emphasis in this section is on psychocultural factors involved in the process of acculturation. The final section of the review presents empirical evidence linking the sociocultural and psychocultural variables investigated in this study to the academic achievement of Mexican American students.

The Mexican Immigrant

According to studies conducted over many years, migration is a selective process. People who leave their native lands may differ from those who remain behind in many ways: sex, age, socioeconomic status, and even personality characteristics (Thomas 1938, Hofstee 1952). Studies of Mexican immigrants have shown that this group has included disproportionate numbers of males and people of productive age, when compared to the entire Mexican population (Grebler, Moore, and Guzmán 1970).

Geographic Origins

Gamio (1930z, 1930b) found evidence which suggested that the contiguous states of Guanajuato, Michoacán, and Jalisco in the central-western part of the country, a predominantly agricultural region, provided over half of the immigrants to this country during 1920-1928. Other authors have stated that the area bordering on Texas was an important secondary locus of migration (Grebler et al. 1970). Data on the geographic origins of braceros seem to confirm these statements, if we assume that permanent immigrants and braceros have come from the same areas (Broom and Shevsky 1952, Saunders and Olen 1951). Chilcott (1968) speculated that Mexican immigrants to Arizona may have come from the urban areas of Sonora.

The accuracy of these estimates is subject to question (Grebler et al. 1970), and the difficulties of obtaining reliable information are compounded by the effects of internal migration

within Mexico. In recent years there has been a significant northward movement toward the United States border. Cardenas (1963) found that the population growth in the northern states bordering on the United States, especially the urban centers next to the border itself, was second only to the rapid growth of the capital city. During the period 1950-1960, the population growth for Mexico as a whole was 34%. During the same period, the nine municipalities bordering on the United States recorded a surprising increase of 84% in population (Cardenas 1963).

Changing Patterns of Migration

Compared with immigrants of other nationalities who have entered the United States during the same periods, Mexican immigrants have generally been of lower occupational status (Grebler et al. 1970). However, there is some evidence which suggests that these patterns may have been changing in recent years. Statistics from the Immigration Service for the period 1960-1968 demonstrated that the number of farm workers and other laborers entering the United States from Mexico has declined sharply and the proportion of white collar workers has shown a modest increase.*

According to some observers, recent immigrants from Mexico have included a growing number of urban dwellers (Peñalosa 1967,

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*Annual Reports of the Immigration and Naturalization Service, 1960-1968, Table 8, cited in Grebler et al. 1970, p. 72.

Grebler et al. 1970) and people of higher socioeconomic status (Carter 1970, Peñalosa 1967).

Social Change Within Mexico

The patterns of Mexican immigration to this country could have been influenced by the process of social change within Mexico. Rapid industrialization and urbanization have produced fundamental changes in Mexican society (Beals 1964, Peñalosa 1967). In the urban areas a new class structure has emerged which is similar to that of other industrialized countries (Beals 1964). Peñalosa (1967) stated that the new Mexican middle class is closer to the American middle class, in general way of life and basic outlook, than it is to the lower class of Mexican society. Lewis (1959; 1968, p. xiv) has described the Mexican poor in terms of a "culture of poverty" which develops "when a stratified social and economic system is breaking down or being replaced by another."

Beals (1964) identified a number of important shifts in value orientations among the members of the new Mexican middle class. These changes included an increasing belief in an open society, a stronger emphasis on individual initiative and effort, and a growing recognition of education as a means to social mobility. Kahl (1968) compared the values of Mexican industrial workers and residents in small towns and found a shift toward "more modern" values in the industrialized sector.

Sociocultural Characteristics of the Recent Mexican Immigrant

As a result of the changing patterns of selective migration and the process of social change within Mexican society, the sociocultural characteristics of recent immigrants may be significantly different from the characteristics of those who emigrated to this country a few decades ago. If it is true that recent immigrants have come from more urbanized, higher socioeconomic levels of Mexican society, and for the present this must be treated as a hypothesis due to the lack of empirical data, then one would expect that the children of these immigrants would experience fewer problems of adaptation to American schools and might even achieve better than second or third generation Mexican Americans.

Culture Change and Individual Adaptation to Acculturation

The general theoretical orientation of this study was based on anthropological theories of culture change and individual adaptation to acculturation.

Divergent Research Orientations Within Anthropology

The extent to which psychological data and processes should be investigated in anthropological studies of culture change is an issue which has been debated for many years. Many anthropologists have conceived of culture as displaying dynamics of its own, abstracted from human bearers, and as providing a

self-sufficient analytic framework. For example, Leslie White (1959, p. 240) has stated that "a consideration of the human organism, individually or collectively, is irrelevant to an explanation of the process of culture change." Alfred Kroeber (1948) has argued that culture should be treated "as if" it were autonomous, and that the anthropologist should seek qualified generalizations about the relations of cultural forms, even though the final causes reside in the psychic or psychosomatic levels.

Other anthropologists have taken issue with the extreme "culturological" point of view. For example, Wallace (1970, p. 4) has argued that "it is about as meaningful to claim that 'culture must be explained in terms of culture,' leaving out biological and psychological levels of explanation, as to assert that 'life must be explained in terms of life,' without reference to chemistry and physics."

Two of the most influential statements on the subject of acculturation were the result of collaborative efforts among several anthropologists (Redfield, Linton, and Herskovits 1936, Social Science Research Council 1954). Both of these statements assigned a rather limited role to psycgological processes in studies of acculturation: personality factors should be considered only to the extent that they function as selective mechanisms during acculturation (Spindler and Spindler 1963, pp. 520-524).

On the other hand, Wallace (1970) has advocated the use of non-cultural data, especially psychological and personality

factors, in the study of culture change, although he admitted that the field of "culture and personality" studies has failed to gain acceptance among many anthropologists. Wallace (1970, p. 38) contended that, among other things, "the faddish use of psychoanalytic theory" has impeded the development of the field. Nevertheless, Wallace stated that the situation was improving and that interdisciplinary studies offered a promising avenue for future development.

Spindler and Spindler (1963) reviewed the literature on culture change during the periods 1929-1952 and 1952-1962. Although they noted a marked disengagement between anthropology and psychology in studies of culture change during these periods, the Spindlers, like Wallace, were hopeful about the future of interdisciplinary studies. Spindler and Spindler (1963, p. 516) advocated a psychocultural approach to acculturation because the impact of another culture causes individuals to be "thrown upon their own resources of adaptation to a greater extent when previously tight cultural boundaries are weakened or destroyed."

A Psychocultural Approach to Acculturation

Spindler (1968) defined the psychocultural system in terms of the linkages between the psychological and cultural systems. He (1968, p. 338) stated that these linkages consist of shared cognitive orientations, specific patterns of thought and control of affect; "each psychocultural system is made up in part

of a unique way of viewing, sorting and synthesizing the events believed to exist in the world."

Both Wallace (1970) and Goodenough (1963) have developed constructs which are closely related to Spindler's psychocultural system.

Wallace (1970, pp. 15-16) described the individual mazeway as a complicated cognitive map containing: "(1) goals and pitfalls [values, or desirable and undesirable end-states]; (2) the 'self' and other objects [people and things]; and (3) ways [plans, processes, or techniques] that may be circumvented or used, according to their characteristics, to facilitate the self's attainment or avoidance of values." Wallace (1970, p. 15) stated that the mazeway is to the individual what culture is to the group.

Goodenough (1963) also distinguished between the individual and group levels of culture: public culture is shared by the members of a group, but each individual has his own private culture. Goodenough's (1963, p. 258) analysis of private culture included four broad areas: (1) percepts and concepts, the ways in which people organize the experience of the real world; (2) propositions and beliefs, the ways in which people organize the experience of their own phenomenal world to anticipate events and design tactics to achieve purposes; (3) values and sentiments, the organization of the phenomenal world into hierarchies of preferences; and (4) operational procedures for the accomplishment of practical ends based on past experience.

Acculturative Stress

Born (1970) proposed a general model of psychological adaptation and development during acculturation, based on the works of Spindler, Wallace, and Goodenough. Born (1970) defined acculturative stress as a basic role conflict or identity crisis produced by the conflicting norms and expectations of two cultural systems.

The works of Spindler (1955, 1968, 1974), Wallace (1970), Goodenough (1963), and Born (1970) provided the theoretical notions of culture change and individual adaptation to acculturation which were used in this study.

Synthesis of the Theoretical Framework

Culture change is a process involving the dimensions of cultural, social and psychological adaptation (Spindler and Spindler 1963). Acculturation is the process of culture change which results from the confrontation of different cultural systems (Spindler 1968). Acculturation alters the "cognitive maps" which individuals use to interpret their world and guide their behavior (Born 1970, Spindler 1974), and it threatens the individual's sense of identity and personal integrity (Spindler 1968). Prejudice in the dominant society may further exacerbate the problems of personal identity (Goodenough 1963, Wallace 1970).

The threat to cognitive control and to identity is anxiety producing (Wallace 1970) and may provide motivation for

identity changes (Goodenough 1963). As a result, the individual may seek to establish a new identity or to reestablish an old one (Spindler 1968).

There are four basic modes of adaptation to the stresses of acculturation: (a) reaffirmation, the return to, or conscious preservation of traditional cultural patterns with corresponding resistance to the new patterns; (b) synthesis of patterns from the confronting cultural systems, (c) assimulation, which involves rejection of the existing cultural system and embracing the new one; and (d) segmentation or compartmentalization of the individual's life through selection of patterns as appropriate to role behavior in limited social contexts (Spindler 1968, Wallace 1970, Born 1970).

Application to the Mexican American Population

It seems clear from general descriptions of Mexican Americans (Grebler et al. 1970) that the confrontation of two cultural systems has produced different forms of psychocultural adaptation within this population. For example, Romano (1969) identified four different life styles among people of Mexican descent in the United States which correspond quite closely to the four adaptive reactions described by Spindler, Wallace, and Born.

Anglo-Saxon conformity. Romano used this term to refer to those Mexican Americans who have moved away from their cultural heritage and have embraced the ways of the dominant society.

According to the theoretical framework described above, this category would be classified as an assimilative reaction.

Stabilized differences. Romano's second category included those individuals who live in barrios throughout the Southwest. Romano pointed out the many regional variations of this pattern and identified certain common features: Spanish language usage, the celebration of fiestas, and the use of traditional food and music. To a certain degree, this category approximates the reaffirmative reaction.

Realigned pluralism. Romano (1969, p. 45) used this term to describe those Mexican Americans who have taken up the ways of the dominant society, "but have found it necessary to establish activities and institutions that are ethnically oriented and parallel to those of the dominant society." This category corresponds to the segmental form of adaptation.

Biculturalism. Romano's final category included those individuals who can function equally well in both cultures. The bicultural category is similar to the reaction described above as synthesis, but the latter term implies more: synthesis is a combination and reconciliation of cultural elements into a new gestalt.

Influence of the School

A number of impressionistic statements concerning the problems of Mexican American students have suggested that their school experiences may create a strain toward the compartmentalized or segmental form of adaptation. These descriptions have

stressed the unfortunate psychological consequences of this form of adaptation.

Rodríguez (1970), Ramírez (1970), Hernández (1967), De León (1959), and Carter (1970) have all described the segmented life of the Mexican American student. A synthesis of their statements is presented below.

The conflicting demands of home and school environments give rise to severe identity crises in Mexican American students. These identity crises are often exacerbated by school practices which derogate the Spanish language and Mexican heritage. By adjusting to the new cultural patterns, the child comes into conflict with his parents. The school tells him that he cannot succeed unless he rejects his cultural heritage, while his family warns that he will become a traitor to his own people if he becomes Americanized. The psychological results of this process are confusion, frustration, insecurity, alienation, and, perhaps, deviant behavior.

Variables Affecting the Achievement of Mexican American Students

After an extensive survey of the predictors of academic performance among students of varied backgrounds, Lavin (1965) concluded that ability accounts for less than half of the variance in school achievement. This finding highlights the importance of studying the non-intellectual correlates of academic achievement.

The present study focused on two types of non-intellectual factors: sociocultural family background variables and psychocultural variables related to the process of acculturation. Two criteria were used in selecting these variables: (a) previous research which has shown them to be associated with the achievement of Mexican American students, and (b) the relationship of these variables to the theoretical framework of the study.

Family Background Factors

The relation of family background factors, in general, to the achievement of all students has been demonstrated in many studies, including the national survey conducted by Coleman et al. (1966). Among the family background factors investigated in different studies, the influence of family socioeconomic status on student achievement has been particularly well documented (Lavin 1965).

Research which has investigated the academic achievement of Mexican American students has identified a number of family background factors which were related to the achievement of this group. These factors included: (a) family socioeconomic level, (b) parental education level, (c) parental stress on education, and (d) home language usage. The results of selected studies which have investigated these variables are presented below.

Family socioeconomic status. Summarizing the findings of several studies which investigated the academic achievement of Mexican American students, Carter (1970, p. 20) concluded that "school achievement, as measured by whatever standard, is closely

related to social class." Schwartz (1971) found that the academic achievement of Mexican American students from white collar homes surpassed the achievement of students from blue collar families.

A study conducted in Los Angeles (Gordon et al. 1968), which sampled students in grades 6, 9, and 12, demonstrated that family socioeconomic status predicted significant amounts of variance in the academic achievement of Mexican American students at all levels. Anderson and Johnson (1968) studied the academic attainment of Mexican American students in grades 7-12 and concluded that retarded school performance was related to low socioeconomic status.

Ramírez (1971) reviewed a number of studies which compared socioeconomic status and acculturation to the norms of the dominant society as predictors of the academic achievement of Mexican American students, and he concluded that socioeconomic status was a more powerful predictor than acculturation.

There was, however, one somewhat dissonant voice in the chorus of investigators who have studied the socioeconomic status of Mexican American students. After a review of the literature, Hernández (1973, p. 4) concluded that socioeconomic status, even though related to the achievement of the population at large, was "not as significant a predictor of achievement for Mexican American students in particular."

Parental education level. Gordon et al. (1968) found that the education level of Mexican American parents predicted

significant amounts of variance in the reading comprehension scores of their children. Anderson and Johnson (1971) studied a sample of Mexican American students at the junior and senior high school levels in a community close to the Mexican border. Anderson and Johnson found that the father's education level was related to the students' grades in English. Kimball (1968) also found a positive correlation between the education level of Mexican American parents in an urban community and the academic achievement of their children, as measured by school grades and scores on a standardized test of reading comprehension.

Parental stress on education. Anderson and Johnson (1971) found that parental stress on receiving good grades, completing high school and going to college were all related to the English and mathematics grades of a group of Mexican American students at the secondary level. Kimball (1968) tested 23 independent variables for association with student achievement and found that the factor of "parental aspirations for the child" was most strongly related to school grades and scores on a standardized test of reading comprehension. Gordon et al. (1968) also found that the factor of parental aspirations was the most consistent predictor of achievement among their large sample of elementary and secondary students. This factor was a better predictor than socioeconomic status.

Home language usage. Rogers (1972) studied the academic achievement of a sample of eighth grade Mexican American students in an urban community in Texas. Rogers found highly significant effects of English language usage in the home on school grades

and scores on the California Test of Basic Skills. Gordon et al. (1968) found that home usage of English was a consistent predictor of the academic achievement of Mexican American students in Los Angeles. Anderson and Johnson (1971) also found that the use of English in the home was related to the achievement of Mexican American students at the junior and senior high school levels.

However, the results of one study partially contradicted the general pattern relating home usage of English to high achievement. Evans and Anderson (1973) studied a sample of Mexican American students in a junior high school in Las Cruces, New Mexico. They found that English language usage in the home was unrelated to the grades received by the students, although this factor was related to scores on a standardized test of achievement. Evans and Anderson (1973, p. 407) concluded that "as a group, Mexican-American students are handicapped on tests requiring fluency in written English, and on such tests increased exposure to English at home is an advantage, but these same students, regardless of their language background, are as capable of meeting the teachers' criteria for success as Anglo-American students."

Acculturative Stress Variables

The theoretical framework of this study views acculturation as a psychocultural process, involving the interaction of cultural and personality factors. During acculturation, the conflicting demands and expectations of two cultural systems affect the individual's sense of personal identity and his feelings of

competence to function in the changing social reality. This analysis suggests that two psychological variables, the individual's self-concept and his sense of control over the environment, could be used to assess the effects of acculturative stress.

Previous research has shown that these two variables were related to the academic achievement of students in general. Studies by Jersild (1952), Reeder (1955), Stevens (1956), and Brookover, Thomas, and Paterson (1964) have documented the relationship between positive self-concept and high achievement. However, the results of a study by Mc David (1959) indicated that this relationship may involve a spiral effect: academic success may result in a more positive self-image which, in turn, may lead to increased success in school. Coleman et al. (1966) found that attitudes concerning control or responsiveness of the environment were highly related to the achievement of students from all ethnic groups.

Self-Concept of Mexican American Students

Ethnic group membership and self-concept. A number of investigations have focused on comparisons of the self-concepts of Mexican American and Anglo students (Hepner 1970; Linton 1970; Rodríguez 1972; Carter 1968; De Blassie and Healy 1970; Coleman et al. 1966). In spite of the contradictory nature of the findings of these studies, it has been demonstrated that many educators believe that Mexican American students, in general, hold negative self-images (Wilson 1968, Carter 1968, Palomares 1970).

Zirkel (1971) reviewed the literature concerning self-concept and ethnic group membership and concluded that the evidence was equivocal and inconclusive. For Mexican American students, he found five studies which showed depressed self-concepts, when compared with Anglo children, and three studies which showed no significant differences. Zirkel cited varying definitions of self-concept, lack of effective instrumentation and faulty experimental design as probable causes for the lack of consistency in these findings.

Self-concept and academic achievement. Several studies have demonstrated that the self-concepts of Mexican American students were related to their academic achievement. Anderson and Johnson (1971) found that the students' self-concept was the best predictor of their grades in English and mathematics. Rogers (1972) investigated a number of personality variables and found that only the self-concept of ability was a consistent predictor of academic achievement among a sample of eighth grade Mexican American students. Evans and Anderson (1973) found that a high self-concept was clearly related to a number of measures of student achievement.

However, a study by Linton (1970) illustrated the complexity of self-concept research with Mexican American students. Linton investigated the multiple relationships among self-concept, ethnicity and socioeconomic status, using a large sample of children at the upper elementary level. Linton found: (a) no significant overall differences in self-concept between Mexican

American and Anglo students, (b) a fairly consistent positive relationship between socioeconomic status and self-concept across ethnic lines, and (c) no consistent pattern of correlation of self-concept with achievement across socioeconomic levels.

Control Over the Environment

Theoretical foundations. The theoretical rationale supporting the construct of control over the environment derives from the "Social Learning Theory" of Rotter (1966). An individual's belief in his ability to exercise control over his environment appears to be an important individual difference variable which may influence behavior in many situations (Rotter, Seeman, and Liverant 1962). An individual may believe that his actions produce the reinforcements which follow his efforts or he may feel that rewards and punishments are controlled by powerful others or are in the hands of fate (Crandall, Katkovsky, and Crandall 1965). If an individual believes that he has little control over the rewards and punishments he receives, there is little reason for him to modify his behavior.

Battle and Rotter (1963) found evidence which suggested that a child's sense of control over his environment was positively associated with social class, and that belief in internal control was stronger in white than in Negro children. Some critics have pointed out that this construct may be less of a personality variable than an accurate perception of the social reality. For example, Carter (1970, p. 44) has argued that, "indeed, minority groups and the poor do not have the same

control over their lives that is exercised by the majority." It has been debated whether this characteristic is attributable to ethnicity or to low socioeconomic status.

Control over the environment and academic achievement. A number of studies have investigated the relationship between a child's sense of control over the environment and his academic achievement. Coleman et al. (1966) found that the attitudes of Mexican American students concerning control or responsiveness of the environment were highly related to their academic achievement. Schwartz (1971) found that this variable was positively related to academic success among a large sample of Mexican American students at the secondary level in Los Angeles. Evans and Anderson (1973) also found that high achievement among Mexican American junior high school students was associated with an activistic, rather than fatalistic, future time orientation.

However, the results of three studies were not consistent with the general pattern linking a sense of control over the environment and school achievement. Justin (1969) found that feelings of personal control were unrelated to the achievement of Mexican American high school seniors in Tucson, Arizona. Rogers (1972) found that this variable predicted significant amounts of variance in achievement among the eighth grade Mexican American boys in her sample, but not among the girls. Friend (1972) found that, when I.Q. was controlled, there was little, if any, relationship between Mexican American students' sense of control over the environment and their academic achievement.

Summary

The literature reviewed in this chapter reflected three major areas: (a) studies relating to Mexican immigration, (b) anthropological theories of culture change, and (c) selected factors related to the academic achievement of Mexican American learners.

The first section of the review focused on the sociocultural characteristics of Mexican immigrants. It was hypothesized that recent Mexican immigrants may have come from more urbanized, higher socioeconomic sectors of Mexican society. Since differences in the sociocultural characteristics of recent Mexican immigrants and native-born Mexican Americans could have accounted for differences in academic achievement between these two groups, a number of sociocultural family background factors were investigated in this study.

The second section of the review presented a psychocultural approach to acculturation as a general theoretical context for the present investigation. The psychocultural approach stressed the effects of conflicting expectations, deriving from two different cultural systems, on the individual's sense of personal identity. The use of this approach led to the inclusion of two psychological variables in the present investigation: the student's self-concept, and his sense of control over the environment.

The final section of the review described the specific sociocultural and psychocultural variables investigated in this

study and presented empirical evidence linking these variables to the achievement of Mexican American students.

CHAPTER 3

DESIGN OF THE STUDY

The problematic situation concerning the academic achievement of recent Mexican immigrants was described and analyzed in the first chapter. Pertinent empirical findings and theoretical orientations which influenced the formulation of the research problem were reviewed in the second chapter. In this chapter the research design which was selected to investigate the problem is presented.

The rationale for selecting the students included in the sample, the actual selection procedures, and the general characteristics of the community in which the study was conducted are described in detail. The instruments used to measure the variables which were investigated are discussed, and the data collection and analysis procedures are presented.

The Sample

Selection Rationale

The general category of foreign-born Mexican Americans was judged to be too broad for the purposes of this study since it included many students who were born in Mexico but emigrated

to this country at an early age. Because of previous research findings concerning the influence of early schooling in the child's home language (Modiano 1968), it seemed desirable to focus on children who had begun their formal schooling in Mexico. Therefore, the recent Mexican immigrant group was composed of those students who were born in Mexico and had attended Mexican schools for at least two years before emigrating to the United States. Also excluded from this group were students entering American schools during the 1974 and 1975 calendar years, because of the problems of initial foreign language learning. This condition was particularly important due to the decision to administer questionnaires written in the English language.

Students born in the United States and residing in this country for the entire period of their schooling formed the population from which the native-born sample was selected.

The decision to sample students at the junior high school level was based on a number of considerations. First, some research evidence suggested that the older the immigrant student was, the better he appeared to do in school (Carter 1970). Second, since the data on the family background characteristics were to be secured by administering written questionnaires to the students, it was judged to be important that older students be sampled because these students would be better able to answer the questions. Finally, the senior high school level was not studied because it seemed possible that the high dropout rate among Mexican American students at this level might produce selective biases in the sample.

Preliminary Investigation

A preliminary investigation was undertaken in Tucson School District No. 1, in an attempt to locate an adequate sample of recent immigrant students at the junior high school level. Almost 3,000 Spanish-surname students were enrolled in the junior high schools of the district during the 1974-75 school year. The investigator reviewed the cumulative records of 950 Spanish-surname students in two junior high schools with a high density of Mexican Americans. It was found that approximately 10% of the Spanish-surname students in the two schools were born in Mexico, but the overwhelming majority of these students had emigrated to the United States before beginning their formal schooling. Since it proved impossible to find a large sample of recent immigrant students who fully met the selection criteria in Tucson District No. 1, it was decided to conduct the study in Nogales, Arizona.

General Characteristics of the Community

Nogales, Arizona, a community of 12,000 people, is located on the Mexican-American border. Immediately adjacent to the American city is the much larger Mexican city of Nogales, Sonora, which has a population of just under 100,000 people. There is considerable social and economic interaction between the two cities. During the 1974-75 school year, the ethnic balance of the Nogales (Arizona) School District was as follows: 86% Mexican American, 13.5% Anglo, and .5% black. The district administrators reported that there had been a considerable increase in the number of Mexican immigrant students entering Nogales

schools over the past five years.

Selection Procedures

The Nogales School District is served by a single junior high school which enrolls students in grades seven and eight. An examination of the records at Wade Carpenter Junior High School revealed that, of the 757 students enrolled during the first semester of the 1974-75 school year, 225 were born in Mexico. As was the case in Tucson District No. 1, many of the foreign-born students in Nogales had emigrated to the United States at an early age. A total of 119 students were eliminated from consideration because they had attended schools in the United States since the first grade. Also excluded were 46 students who had less than two years of schooling in Mexico or had arrived in the United States during the calendar years 1974-1975. The remaining 60 students (29 females and 31 males) who fully met the selection criteria were chosen for the recent immigrant group. Before the instruments were administered, one seventh grade girl withdrew from school, leaving a total of 59 students in the recent immigrant sample.

After the experimental group of recent Mexican immigrant students had been selected, an equivalent control group of native-born students was chosen. First, the entire group of 225 foreign-born students was removed from the card catalog of students. Approximately 525 students remained in the selection pool. This pool was divided into groups of eight students, and the eighth student from each group was selected for potential

inclusion in the native-born sample. This process produced a sample of 70 students which included a few Anglo Americans. The school administrators identified the Anglo students in the sample, and these were removed. The reduced sample of native-born Mexican Americans included 32 seventh grade and 27 eighth grade students. Five more randomly selected eighth grade students were added to equalize the groups. Before the instruments were administered, five students previously selected for the native-born group left school.

The final breakdown of the sample by grade level and sex is presented in Table 1.

Instrumentation

Student Achievement

The academic achievement of the recent immigrants and native-born students in the sample was measured by grades obtained during the first semester of the 1974-75 school year and scores on two subtests of the Standard Achievement Test.

Table 1. Composition of the Native-Born and Recent Immigrant Samples

Group	Males	Females	Total
Recent Immigrants			
Grade 7	14	17	31
Grade 8	17	11	28
Total	31	28	59
Native-Born			
Grade 7	14	15	29
Grade 8	15	15	30
Total	29	30	59

The Advanced Battery of the Stanford Achievement Test, designed for administration in grades seven and eight, comprises nine separate tests. The individual tests are all highly intercorrelated, with coefficients ranging from .65 to .85 (Madden et al. 1973, p. 14). Two of the least correlated measures (r = .70) were selected for use in this study: the Reading Comprehension Test and the Mathematics Computation Test. The Spearman-Brown split-half reliability coefficients for these two tests are .95 and .90, respectively (Madden et al. 1973, p. 13).

Family Background Factors

A 15 item questionnaire was designed to assess the family background variables investigated in this study. A copy of this questionnaire is presented in Appendix A.

The Family Background Questionnaire included both open-ended questions and Guttman scales. The open-ended questions (numbers 1-5, 8 and 9) were designed to elicit family demographic data. Guttman scales were constructed to assess parental education level (numbers 6 and 7), use of English in the home (numbers 10-12), and parental stress on education (numbers 13-15). The questions concerning language usage in the home were adapted from a scale developed by Anderson and Evans (1969).

Before administration to the entire sample, the instrument was field tested with a group of 15 students at Wade Carpenter Junior High School who had been excluded from the study. After the field test, one question was rewritten to achieve greater clarity.

Acculturative Stress Variables

The effects of acculturative stress were measured on two dimensions: the student's self-concept, operationally defined in terms of Coopersmith's (1967a) Self-Esteem Inventory (SEI), and his sense of control over the environment, as defined by the Intellectual Achievement Responsibility questionnaire (IAR) developed by Crandall, Katkovsky, and Crandall (1965).

Coopersmith SEI. The development of the Self-Esteem Inventory was described by Coopersmith in his 1967 monograph. Reliability data were reported in the same publication. Over a five week interval, a test-retest reliability coefficient of .88 was obtained with a sample of 30 fifth grade students. Another reliability coefficient of .70 was reported for a sample of 56

children attending the public schools of central Connecticut, over a three year period (Coopersmith 1967a, p. 10). Norms for the scores obtained on the Self-Esteem Inventory were derived from a large sample of students in the public schools of Connecticut. The mean score for males was 70.1, and the mean for females was 72.2 (Coopersmith 1967a, p. 10).

Crandall IAR. The Crandall inventory was designed to measure the degree to which a child feels that his own behavior, rather than external forces, is responsible for his academic successes or failures. The inventory was constructed to sample both positive and negative events (successes or failures). In addition to the total score (I), measuring the child's sense of internal control over the environment, separate subscales were constructed to measure belief in internal responsibility for success (I^+) and for failure (I^-). The authors reported moderately high test-retest reliability for this instrument. Test-retest correlations of .69 (total I), .66 (I^+) and .74 (I^-) were obtained from a sample of children in grades three, four and five, over a two month interval. A similar test of instrument reliability was conducted with a sample of ninth grade children and produced reliability coefficients of .65 for total I, .47 for I^+ and .69 for I^- (Crandall et al. 1965, p. 100).

The Coopersmith and Crandall inventories were field tested, along with the Family Background Questionnaire, to check on the time required for administration. It was found that all three instruments could be administered in a 45 minute class period without rushing the students.

Data Collection

The investigator administered the Coopersmith and Crandall inventories and the Family Background Questionnaire to the sample. Students were processed in groups of 12, during 10 class periods over two school days. The instruments were administered to the recent immigrant sample on the first day and to the native-born sample on the second day. Each question was read aloud by the investigator before the students marked their responses. Care was taken to standardize administration procedures for all groups.

The students' grades were obtained from the school records. The Stanford Achievement Test was administered to the entire school on April 16, 1975 by the regular classroom teachers, as part of the institutional testing program.

Data Analysis

Scoring and Coding the Data

Grade point averages. Two grade point averages were calculated for each student: (a) an academic grade point average, which included grades in English, mathematics, social studies and science, and (b) a total grade point average, which included all grades received. The grading scale employed ranged from 1 (A) to 5 (F).

Stanford Achievement Test. The Reading Comprehension and Mathematics Computation Tests were hand scored by the investigator, using the scoring keys provided by the publisher. The raw scores were converted to stanine scores through the use of the

tables provided in the testing handbook (Madden et al. 1973).

Family Background Questionnaire. This questionnaire included a number of scales and indices. Family demographic data, such as the size of the family and birth order of the student, were coded directly from the responses made on the questionnaire.

The occupational status of the father and mother were evaluated using Turner's (1964) scale for the classification of occupations which distinguishes eight levels of occupational status, ranging from unskilled labor to professional status. The occupational status of the parents was coded from 1 (low) to 8 (high) according to this scale.

The education level of the parents was evaluated using a five-step scale ranging from a grade school education to a college degree. Education level was coded from 1 (grade school) to 5 (college degree).

The three questions (numbers 10-12) designed to measure language usage in the home each contained a five-step scale. Scores ranged from 1 (exclusive use of Spanish) to 5 (exclusive use of English). The scores on each question were combined into a single index of home language usage which varied from 3 to 15. The higher the score on this index, the greater the use of English in the home.

Parental stress on education was assessed by three questions. Two questions (numbers 13 and 14) contained a five-step scale, and one question (number 15) contained a four-step scale. Questions 14 and 15 were reversed scales with the highest scoring

response appearing first. A single index of parental stress on education was computed by combining the scores on the three questions. The index ranged from 3 (low parental stress on education) to 14 (high stress on education).

Coopersmith SEI. The Self-Esteem Inventory was scored according to the instructions provided by the author (Coopersmith 1967b). The inventory contained 50 items and a lie scale which was not used in this study. Scores were coded in terms of the number of correct items, multiplied by a factor of two. The higher the score, the more positive the self-image of the student.

Crandall IAR. The Intellectual Achievement Responsibility questionnaire was scored according to the instructions provided by the authors (Crandall et al. 1965). The student's I^+ score was obtained by summing all positive events for which he assumed credit, and his I^- score was the total of all negative events for which he assumed blame. Both the I^+ scale and the I^- scale contained 17 items. The total I score was the sum of the I^+ and I^- subscores and ranged from 0 to 34. The higher the score, the greater the sense of internal control over the environment.

Statistical Processing

Each student was assigned an identification number and all coded data were transferred to IBM cards for statistical processing. The complete data file was contained on 118 cards, one for each student.

Statistical processing was carried out through the use of the computational algorithms provided in the Statistical Package for the Social Sciences (Nie, Bent, and Hull 1970). The 5.8 version of SPSS was in use at The University of Arizona Computer Center during the period in which the data were analyzed.

Descriptive Statistics

The first step in the statistical analysis of data was the calculation of measures of central tendency and dispersion for all variables under investigation. The statistical procedures performed included the calculation of means, standard deviations and extreme values. Descriptive statistics were calculated for the recent immigrant group as a whole, for the native-born group as a whole, and for the male and female populations within each group.

Evaluation of the Research Hypotheses

Three research hypotheses were investigated in this study:

H_1--Recent Mexican immigrants attain higher levels of academic achievement than native-born Mexican American students.

H_2--Recent Mexican immigrants undergo less acculturative stress than native-born Mexican American students.

H_3--Recent Mexican immigrants rank higher than native-born Mexican American students on the following variables: parents' education level, father's present occupational status, and parental stress on education.

All three research hypotheses involved the same independent variable: recent immigrants vs. native-born students. The dependent variables were the measures of student achievement, the acculturative stress variables, and the family background factors. Each research hypothesis was translated into a statistical hypothesis of the following form:

> There are no statistically significant differences between the mean score of the recent immigrants and the native-born students on the following dependent measure . . .

Two-tailed tests of statistical significance were performed to evaluate each null hypothesis. The more conservative two-tailed test was selected because it provided power against accepting the null hypothesis if either the mean of the recent immigrant group exceeded the mean of the native-born group or the mean of the native-born group exceeded the mean of the recent immigrant group. The two-tailed _t_-tests were performed for the recent immigrant and native-born groups as a whole, and for the male and female populations within each group.

Since rejection of the null hypothesis did not, by itself, indicate the strength of a relationship between the independent and dependent variables, a second level of analysis was indicated. When significant differences in group means were detected by the use of the _t_ statistic, Pearson product-moment correlation coefficients were calculated, using birthplace (Mexico vs. United States) as a dichotomous independent variable. Correlation coefficients were calculated for the total groups and for males and females separately. The correlational analysis was

arranged so that a positive coefficient represented a positive relationship between birth in the United States and the particular dependent variable under investigation. Only those correlation coefficients which were significant at the .01 or .05 levels were reported.

Evaluation of the Research Questions

In addition to the three research hypotheses, the following questions were investigated in this study:

1. Do recent Mexican immigrants tend to come from urban rather than rural areas of Mexico?
2. Do the fathers of recent Mexican immigrant students tend to come from the skilled labor and white collar sectors of Mexican society?
3. Which family background factors and acculturative stress variables are correlated with the academic achievement of recent Mexican immigrant students and native-born Mexican Americans?

The first two questions were evaluated by examining the tabulated responses to questions included in the Family Background Questionnaire.

The correlates of student achievement were determined by the Pearson product-moment method. Correlation coefficients were calculated for each independent variable in combination with the four dependent measures of academic achievement. Separate coefficients were calculated for the total groups (recent immigrants

and native-born students) and for the male and female populations within each group. Seven family background factors and four measures of acculturative stress were included as independent variables in the correlational analysis. The family background variables investigated were: (a) father's education level, (b) mother's education level, (c) father's present occupational status, (d) mother's occupational status, (e) home usage of the English language, (f) parental stress on education, (g) family size, and (g) birth order of the students. The acculturative stress variables were: the student's self-concept, as measured by the Coopersmith SEI, and his sense of control over the environment, as measured by the two subscales and the total scale of the Crandall IAR questionnaire.

Supplementary Investigations

After the research hypotheses and questions had been analyzed, two supplementary investigations were undertaken in order to study other factors which might have been related to the academic performance of the recent immigrant students. First, the chronological ages of the recent immigrant and native-born groups were compared. Second, an attempt was made to assess the effects of length of schooling in the United States on the academic achievement of the recent immigrant students.

Chronological age differences. The entire sample was divided into two groups on the basis of grade placement (seventh or eighth grade). Two-tailed *t*-tests were performed to determine if there were differences in the chronological ages of the recent

immigrants and the native-born students at each grade level.

Length of schooling in the United States. Since the recent immigrant sample was composed of students who had attended schools in this country for a period of one to five years, it seemed possible that students with more schooling in the United States might have achieved better than the most recent arrivals. Therefore, a separate analysis was performed to test for the existence of a relationship between the number of years of schooling in the United States and academic achievement.

The recent immigrant group was divided into four subgroups: (a) students with only one year of schooling in the United States (N = 16), (b) students with two years of schooling (N = 21), (c) students with three years of schooling (N = 10), and (d) students with four or five years of schooling (N = 12).

First, separate one-way analyses of variance were performed for each achievement variable in turn. Then the strength of the relationship between length of schooling in this country and academic achievement was investigated through correlational analysis. Pearson product-moment correlation coefficients were calculated for the entire recent immigrant sample and for each sex separately.

Summary

This study was conducted in Nogales, Arizona, a community of 12,000 people, located on the Mexican-American border. The sample included 118 junior high school students, 59 recent Mexican immigrants, and 59 native-born Mexican Americans.

Because of previous findings concerning the influence of early schooling in the child's home language, it was decided to restrict the recent immigrant sample to those students who had attended Mexican schools for at least two years before emigrating to this country. Several factors influenced the choice of the junior high school level for this study, among them the results of previous research which suggested that differences in academic achievement between recent immigrants and native-born students might be more pronounced among older students.

The major variables investigated in this study were the academic achievement of the students in the sample, their family background characteristics, and the effects of acculturative stress.

Academic achievement was measured by the student's grade point averages and their scores on the Reading Comprehension and Mathematics Computation subtests of the Stanford Achievement Test. Data on the family background characteristics of the students were obtained through the use of a written questionnaire. The effects of acculturative stress were assessed by the Coopersmith Self-Esteem Inventory and the Crandall Intellectual Achievement Responsibility questionnaire. All instruments and data collection were in English.

Statistical analysis of the data included *t*-tests to determine if there were significant differences between the mean scores of the recent immigrant and native-born groups on the measures of student achievement, the family background

characteristics, and acculturative stress variables. Correlational analysis was used to investigate factors related to student achievement.

Three research hypotheses were investigated. It was predicted that recent immigrants would score higher than native-born students on the measures of academic achievement, the family background characteristics, and the acculturative stress variables. Data on the geographic origins of recent Mexican immigrants, and the occupational status of their fathers in Mexico prior to emigration, were also collected and analyzed. Two supplementary investigations were undertaken to investigate differences in chronological age between the two groups and to assess the effects of length of schooling in the United States on the recent immigrant students.

CHAPTER 4

RESULTS

The findings of this study, concerning the academic achievement levels of recent Mexican immigrants and native-born Mexican Americans and selected factors which were related to the achievement of each group, are presented in this chapter.

Descriptive Statistics

The means, standard deviations and extreme values of all variables under investigation are presented in Appendix B.

An examination of the descriptive statistics revealed that, contrary to predictions, the native-born students consistently scored higher than the recent immigrants on the measures of student achievement, the acculturative stress variables, and the family background characteristics.

Academic Achievement Levels

The first research hypothesis predicted that the recent immigrants would achieve better than the native-born students on the following dependent measures: (a) academic grade point average, (b) total grade point average, (c) the Reading Comprehension Test of the Advanced Battery of the Stanford Achievement Test, and (d) the Mathematics Computation Test of the same instrument.

The mean scores for all measures of student achievement and the results of the tests for differences between group means are presented in Table 2. Highly significant differences in group means were found for all dependent measures except the Mathematics Computation Test. These differences held for the total analysis (all recent immigrants vs. all native-born students) and the analysis by sex. Thus the null hypothesis was rejected for three of the four dependent measures. However, none of the significant differences were in the predicted direction: native-born students had higher grade point averages and scores on the Reading Comprehension Test than recent immigrant students.

The results of the correlational analysis designed to test the strength of the relationship between birth in the United States and academic achievement are presented in Table 3. There was a consistent positive relationship across three measures of achievement. The relationship between birth in the United States and academic achievement appeared to be stronger for males than for females.

Using the coefficient of determination--the square of the correlation coefficient--as a measure of the amount of variance in the dependent variable attributable to the influence of the independent variable, the single factor of birth in the United States explained from 14% to 18% of the total variance in Achievement for females, and from 20% to 25% of the total variance for males.

Table 2. Mean Scores on the Measures of Student Achievement and Results of the Tests for Differences Between Groups

Group	Recent Immigrants Mean	Recent Immigrants SD	Native-Born Mean	Native-Born SD	df	t value
Academic Grade Point Average[a]						
Total	3.52	.68	2.78	.81	116	-5.34[d]
Males	3.72	.63	2.96	.73	58	-4.32[d]
Females	3.30	.67	2.62	.87	56	-3.35[c]
Total Grade Point Average[a]						
Total	3.19	.67	2.50	.72	116	-5.39[d]
Males	3.32	.68	2.62	.65	58	-4.06[d]
Females	3.06	.66	2.38	.78	56	-3.55[c]
SAT Reading Comprehension[b]						
Total	3.02	1.25	4.09	1.15	110	-4.70[d]
Males	2.83	1.20	4.00	1.11	54	-3.79[d]
Females	3.23	1.31	4.17	1.21	54	-2.79[c]
SAT Mathematics Computation[b]						
Total	3.46	1.40	3.86	1.53	110	-1.46
Males	3.35	1.34	3.37	1.34	54	- .07
Females	3.58	1.47	4.30	1.60	54	-1.76

Note: Two-tailed tests of significance.

[a]The grading scale ranges from 1 (A) to 5 (F).

[b]SAT scores are expressed in stanines.

[c]$p < .01$.

[d]$p < .001$.

Table 3. Correlation of Birth in the United States With Measures of Student Achievement

Group	df	Pearson r
Academic Grade Point Average		
Total	116	.444[b]
Males	58	.494[b]
Females	56	.409[a]
Total Grade Point Average		
Total	116	.447[b]
Males	58	.470[b]
Females	56	.428[b]
SAT Reading Comprehension		
Total	110	.409[b]
Males	54	.459[b]
Females	54	.355[a]

[a] $p < .01$.
[b] $p < .001$.

In summary, the first research hypothesis was not supported by these findings. Contrary to predictions, native-born students attained higher levels of academic achievement than recent immigrant students.

Acculturative Stress

Two measures of acculturative stress were investigated in this study: the student's self-concept (measured by the Coopersmith Self-Esteem Inventory) and his sense of control over the environment (measured by the Crandall Intellectual Achievement Responsibility questionnaire). Expressed in operational terms, the second research hypothesis predicted that recent immigrant students would score higher than native-born students on the Coopersmith and Crandall inventories.

The mean scores of the recent immigrant students and the native-born students on the measures of acculturative stress and the results of the tests performed to investigate differences between the group means are presented in Table 4. The native-born students scored higher than the recent immigrants on both instruments, but the differences did not reach statistical significance in each case.

On the Coopersmith SEI, significant differences in mean scores were found for the total sample and for males, but not for females. Therefore, the null hypothesis was rejected for the male group.

Table 4. Mean Scores on the Measures of Acculturative Stress and Results of the Tests for Differences Between Groups

Group	Recent Immigrants Mean	SD	Native-Born Mean	SD	df	t value
Coopersmith SEI[a]						
Total	59.5	13.6	67.6	16.2	106	-2.82[e]
Males	59.1	15.1	71.6	13.8	53	-3.20[e]
Females	59.9	12.2	63.6	17.7	51	- .87
Crandall IAR: I^+ Subscale[b]						
Total	11.9	2.3	12.9	2.6	107	-2.24[d]
Males	11.9	2.2	13.1	2.5	53	-1.92
Females	11.9	2.5	12.8	2.7	52	-1.26
Crandall IAR: I^- Subscale[b]						
Total	10.4	2.2	11.2	2.8	107	-1.68
Males	10.3	1.8	10.6	2.6	53	- .51
Females	10.4	2.7	11.8	2.9	52	-1.75
Crandall IAR: Total I[c]						
Total	22.3	3.5	24.1	4.5	107	-2.30[d]
Males	22.2	3.0	23.7	4.2	53	-1.51
Females	22.5	4.1	24.5	4.8	52	-1.70

Note: Two-tailed tests of significance.

[a]Scores on the Coppersmith SEI can range from 0 to 100. The higher the score, the more positive the self-image.

[b]Scores on the I^+ and I^- subscales can range from 0 to 17. The higher the score, the greater the student's sense of control over the environment.

[c]The total I score is the sum of the two subscales.

[d]$p < .05$.

[e]$p < .01$.

On the Crandall IAR, only the total group difference on the I^+ subscale and the total I scale proved to be statistically significant, and thus the null hypothesis could not be rejected for either males or females.

The results of the correlational analysis are presented in Table 5. With the exception of the scores of the male group on the Coopersmith SEI (r = .402), the relationship between birth in the United States and the acculturative stress variables was found to be quite weak.

In summary, the second research hypothesis was not supported by these findings. Recent immigrants did not undergo less acculturative stress than native born Mexican Americans. The native-born students scored higher on both the Coopersmith and Crandall inventories, although the comparisons by sex reached statistical significance only in the case of the self-concepts of male students.

Family Background Variables

The third research hypothesis predicted that recent immigrants would score higher than native-born students on the following family background variables: (a) father's education level, (b) mother's education level, (c) parental stress on education, (d) father's present occupational status, and (e) mother's occupational status. Since only 26 students, out of a total sample of 118, reported that their mothers were currently employed, the final variable was dropped from the analysis.

Table 5. Correlation of Birth in the United States With Acculturative Stress Variables

Group	df	Pearson r
Coopersmith SEI		
Total	106	.264[b]
Males	53	.402[b]
Females	51	NS
Crandall IAR: I^+ Subscale		
Total	107	.212[a]
Males	53	.255[a]
Females	52	NS
Crandall IAR: I^- Subscale		
Total	107	.161[a]
Males	53	NS
Females	52	.236[a]
Crandall IAR: Total I		
Total	107	.217[a]
Males	53	NS
Females	52	.229[a]

[a] $p < .05$.

[b] $p < .01$.

The mean scores for recent immigrants and native-born students on the remaining four family background variables are presented in Table 6, along with the results of the tests performed to investigate differences in group means.

Since these four variables measured family, rather than individual characteristics, the total group comparison (recent immigrants vs. native-born students) was more meaningful than the comparison by sex. Therefore, only the total group results were interpreted.

The native-born group scored higher than the recent immigrant group on all four family background variables, and the results were statistically significant in each case. Therefore, the null hypothesis was rejected for all four variables.

The results of the correlational analysis are presented in Table 7. There was a weak positive relationship between birth in the United States and high rankings on the family background factors.

In summary, the final research hypothesis was not supported by the results of this study. Contrary to predictions, native-born students ranked higher than recent immigrants on the following family background variables: father's education level, mother's education level, father's present occupational status, and parental stress on education.

Table 6. Mean Scores on the Family Background Variables and Results of the Tests for Differences Between Groups

Group	Recent Immigrants Mean	SD	Native-Born Mean	SD	df	t value
Father's Education Level[a]						
Total	1.91	1.27	2.60	1.24	92	-2.66[e]
Males	1.83	1.23	2.84	1.25	46	-2.83[e]
Females	2.00	1.33	2.37	1.21	44	- .98
Mother's Education Level[a]						
Total	1.81	1.05	2.43	1.00	95	-2.92[e]
Males	1.87	1.18	2.62	1.02	47	-2.37[d]
Females	1.75	.91	2.25	.97	46	-1.81
Father's Present Occupational Status[b]						
Total	2.66	1.54	3.80	1.78	92	-3.30[e]
Males	2.32	1.13	3.64	1.68	45	-3.12[e]
Females	3.00	1.83	3.96	1.90	45	-1.76
Parental Stress on Education[c]						
Total	10.9	2.5	11.8	1.8	106	-2.14[d]
Males	10.8	2.8	12.1	1.7	52	-2.10[d]
Females	11.0	2.3	11.5	2.0	52	- .87

Note: Two-tailed tests of significance.

[a]Parental education level can range from a value of 1 (grade school education) to a value of 5 (university degree).

[b]Occupational status can range from a value of 1 (unskilled labor) to a value of 8 (professional).

[c]Parental stress on education can range from a value of 3 to a value of 14. The higher the score, the greater the degree of parental stress on education.

[d] $p < .05$.

[e] $p < .01$.

Table 7. Correlation of Birth in the United States With Family Background Variables

Group	df	Pearson r
Father's Education Level		
Total	92	.268[b]
Males	46	.385[b]
Females	44	NS
Mother's Education Level		
Total	95	.287[b]
Males	47	.327[a]
Females	46	.258[a]
Father's Present Occupational Status		
Total	92	.325[b]
Males	45	.422[b]
Females	45	.254[a]
Parental Stress on Education		
Total	106	.204[a]
Males	52	.280[a]
Females	52	NS

[a] $p < .05$.
[b] $p < .01$.

Rural-Urban Point of Origin

Each student was asked to indicate the city and state where he was born, and the responses of the recent immigrant students were tabulated. In six cases the data were incomplete, and the information was secured from the school records. The tabulated results are presented in Table 8.

All but one of the recent immigrant students were born in the state of Sonora, Mexico, and fully 83% were born in the border city of Nogales, Sonora, which is contiguous with Nogales, Arizona. In view of the overwhelming proportion of students born in Nogales, Sonora, it was felt that further analysis of the data would be misleading.

Father's Occupational Status in Mexico

All of the recent immigrant students were asked to respond to the question: "What was your father's job in Mexico before your family came to the United States?" The level of nonresponse to this question was quite high. Only 24 students, out of a total of 59, answered the question. The missing data precluded any meaningful evaluation of this question. However, those who did respond to this question reported occupations which tended to cluster in the unskilled, semiskilled and skilled labor categories of Turner's (1964) classification of occupations.

Table 8. Birthplace of Recent Immigrant Students

City and State	Number of Students
Nogales, Sonora	49
Cananea, Sonora	3
Hermosillo, Sonora	2
Santa Ana, Sonora	1
Guaymas, Sonora	1
Cuidad Obregón, Sonora	1
Navajoa, Sonora	1
Cuiliacán, Sinaloa	1
Total	59

Correlates of Academic Achievement

Seven family background factors and four measures of acculturative stress were included in the correlational analysis.

The family background variables investigated were: (a) father's education level, (b) mother's education level, (c) father's present occupational status, (d) home usage of the English language, (e) parental stress on education, (f) family size, and (g) birth order of the students. An additional family background factor had to be dropped from the analysis. The mother's occupational status was excluded because only 26 children out of a total of 118 indicated that their mothers were currently employed.

The acculturative stress variables included in the correlational analysis were: the student's self-concept, as measured by the Coopersmith SEI, and his sense of control over the environment, as measured by the two subscales and the total scale of the Crandall IAR questionnaire.

The principal results of the correlational analysis are presented in Tables 9 and 10. Since the total I scale did not correlate with any of the dependent measures and the mother's education level correlated with only one measure of student achievement, these variables were excluded from the tabular presentation of results. All correlation coefficients were significant at the .05 level or better.

Among the family background factors, home usage of the English language was the best predictor of academic achievement. However, the analysis by sex revealed that this factor primarily affected the achievement of females in each group.

Family size and, to a lesser degree, the birth order of the students were negatively related to the achievement of both males and females in the native-born group, but these factors were essentially unrelated to the achievement of recent immigrants.

For males in both groups, the father's education level and occupational status were positively related to several of the achievement measures, but the relationship did not hold for females of either group.

Table 9. Family Background Correlates of Student Achievement[a]

Group	Grade Point Averages Academic	Total	Stanford Ach. Test Reading	Math
Father's Education Level				
Recent Immigrants				
Total	.281	.323		
Males	.374	.366		
Females				
Native-Born				
Total	.275	.293		
Males	.480	.444		.431
Females				
Father's Occupational Status				
Recent Immigrants				
Total	.257	.279		
Males	.392		.417	
Females				
Native-Born				
Total	.348	.283		
Males	.379	.344		
Females				
Home Usage of English Language				
Recent Immigrants				
Total	.412	.450	.347	
Males				
Females	.469	.506		
Native-Born				
Total	.405	.323	.276	.345
Males				
Females	.598	.490		.486

Table 9, Continued

Group	Grade Point Averages Academic	Total	Stanford Ach. Test Reading	Math
Parental Stress on Education				
Recent Immigrants				
Total	.307	.337		
Males	.363			
Females		.383		
Native-Born				
Total				
Males	.375			
Females				
Size of Family				
Recent Immigrants				
Total				
Males				
Females				
Native-Born				
Total	-.321	-.274	-.359	-.357
Males	-.370	-.405	-.412	-.376
Females	-.354		-.337	-.458
Birth Order of Student				
Recent Immigrants				
Total	.254	.274		
Males				
Females				
Native-Born				
Total	-.340	-.307	-.319	-.233
Males			-.363	
Females	-.608	-.577		-.375

[a]All correlation coefficients are significant, $p < .05$

Table 10. Acculturative Stress Correlates of Student Achievement[a]

Group	Grade Point Averages Academic	Total	Stanford Ach. Test Reading	Math.
Coopersmith SEI				
Recent Immigrants				
Total	.477	.424	.385	.385
Males	.414			.381
Females	.599	.627	.586	.392
Native-Born				
Total			.367	.280
Males	.348	.395	.523	.431
Females			.327	.374
Crandall IAR: I^+ Subscale				
Recent Immigrants				
Total	.259	.308		
Males	.326			
Females				
Native-Born				
Total				
Males				
Females				
Crandall IAR I^- Subscale				
Recent Immigrants				
Total				
Males				
Females				
Native-Born				
Total	.279	.246		
Males				
Females			.329	

[a]All correlation coefficients are significant, $p < .05$.

Among the acculturative stress variables, the student's self-concept was the most consistent predictor of academic achievement. The positive relationship between self-concept and achievement was strongest among recent immigrant females and native-born males.

The three measures of control over the environment showed only scattered and inconsistent relationships with student achievement.

Considering the results of this analysis as a whole, sex differences appeared to have had a stronger effect on the patterns of correlation than differences between the recent immigrant and native-born populations.

Chronological Age Differences

No significant differences in the chronological ages of recent immigrants and native-born students were found. The t values obtained were .84 (df = 55, $p < .41$) for seventh grade students and -.56 (df = 56, $p < .58$) for eighth grade students.

Length of Schooling in the United States

The first step in the investigation of the effects of length of schooling in the United States on the recent immigrant population involved the calculation of separate one-way analyses of variance for each achievement variable. The results of the analysis of variance tests are presented in Table 11. It was found that length of schooling had no effect on the academic or

Table 11. Effects of Length of Schooling in the United States on the Academic Achievement of Recent Immigrants

Source	df	Sum of Squares	Mean Squares	F Ratio
Academic Grade Point Average				
Between groups	3	.339	.113	.237
Within groups	55	26.167	.476	
Total	58	26.506		
Total Grade Point Average				
Between groups	3	1.174	.391	.855
Within groups	55	25.191	.458	
Total	58	26.365		
SAT Reading Comprehension				
Between groups	3	16.808	5.603	4.191[b]
Within groups	51	68.174	1.337	
Total	54	84.982		
SAT Mathematics Computation				
Between groups	3	14.900	4.967	2.792[a]
Within groups	51	90.736	1.779	
Total	54	105.636		

[a] $p < .05$.
[b] $p < .01$.

total grade point averages, but it was related to both standardized measure of achievement.

Correlational analysis revealed that there was a positive relationship between length of schooling in the United States and scores on the Reading Comprehension Test for the entire group (r = .336, p < .01), and for males (r = .438, p < .01), but not for females. No significant relationships were found in the correlational analysis of the scores on the Mathematics Computation Test.

It appears that the length of schooling in the United States had an effect on the English reading comprehension scores of the recent immigrant students, especially the males. However, those recent immigrants who had been in this country for the longest period of time still ranked below the average of the native-born students. On the Reading Comprehension Test, the mean of the recent immigrants with four or five years of schooling in this country was 3.45, compared to a mean of 4.09 for the native-born students. The mean of the males in each group were 3.45 and 4.00, respectively.

Summary

The major purpose of this study was to determine if there were differences in academic achievement between recent Mexican immigrants and native-born Mexican American students. Significant differences were found for three of the four measures of student achievement, but the results were not in the predicted

direction: the native-born students in the sample attained higher levels of academic achievement than the recent immigrants.

It was found that these differences in academic achievement could not be accounted for by the chronological ages of the students, since there were no significant differences in the ages of the recent immigrants and native-born Mexican-Americans in the sample.

A further analysis of the academic achievement of recent immigrant students demonstrated that length of schooling in the United States had no effect on the grades received by these students, although this factor was related to the reading comprehension scores of the males in the group. However, those recent immigrant students who had been in this country for the longest period of time still ranked below the average of the native-born students on the reading comprehension test.

A secondary purpose of the study was to investigate selected sociocultural and psychocultural factors which may have been related to the academic achievement of each group. Although it was found that native-born students ranked higher than recent immigrants on most of the sociocultural and psychocultural factors, an analysis of the correlates of academic achievement demonstrated that sex differences had a stronger effect on the patterns of correlation than differences between the recent immigrant and native-born groups.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

An overview of the entire study is presented in this chapter, the conclusions of the study are analyzed and discussed, and recommendations for future research are made. The findings of this study are compared with the results of previous research, and possible theoretical implications are considered.

SUMMARY

A survey conducted in four southwestern states (Carter 1970) revealed that many teachers and administrators believed that students entering their schools directly from Mexico achieved better than the average second or third generation Mexican American. However, little empirical evidence has been reported which would support this belief, and no satisfactory theoretical rationale has been advanced which would explain why students who have recently emigrated to the United States should achieve better than children of Mexican descent who were born in this country.

The present study was undertaken to determine if there were differences in academic achievement between recent Mexican immigrants and native-born Mexican American students at the

junior high school level, and to investigate selected factors which may have been related to the achievement of these two groups.

The study was conducted at the Wade Carpenter Junior High School in Nogales, Arizona. The sample included 118 seventh and eighth grade students: 59 recent immigrants (31 males and 28 females), and 59 native-born students (29 males and 30 females). Students who were born in Mexico and had attended Mexican schools for at least two years before emigrating to this country were defined as recent immigrants. Students born in the United States and residing in this country for the entire period of their schooling were defined as native-born Mexican Americans.

Three different types of variables were investigated: (a) measures of student achievement, (b) family background factors, and (c) acculturative stress variables.

Four measures of student achievement were investigated in this study: total grade point average, grade point average in academic subjects (English, social studies, science and mathematics), and scores on the Reading Comprehension Test and the Mathematics Computation Test of the Advanced Battery of the Stanford Achievement Test.

The following family background factors were studied: father's education level, mother's education level, father's present occupational status, mother's occupation status, home usage of the English language, parental stress on education,

family size, and birth order of students. These variables were measured by the Family Background Questionnaire developed for this study.

Acculturative stress was defined as a basic role conflict or identity crisis produced by the conflicting norms and expectations of two cultural systems. The effects of acculturative stress were assessed on two dimensions: the student's self-concept, as measured by Coopersmith's (1967a) Self-Esteem Inventory, and his sense of control over the environment, as measured by the Intellectual Achievement Responsibility questionnaire (Crandall, Katkovsky, and Crandall 1965).

The investigator administered three instruments to the sample: the Family Background Questionnaire and the Crandall and Coopersmith inventories. The students' grades and their scores on the Stanford Achievement Test were secured from the school records. All instruments and data collection were in English.

Three research hypotheses were investigated in this study. It was predicted that recent immigrants would attain higher levels of academic achievement than native-born Mexican Americans, would undergo less acculturative stress, and would score higher on selected family background variables.

The research hypotheses were evaluated by comparing the mean scores of the recent immigrants and native-born students on the dependent measures of academic achievement, acculturative stress, and family background variables. All recent immigrants were compared with all native-born students, and separate

analyses were performed by sex. When significant differences were detected through the use of the *t* statistic, Pearson product-moment correlation coefficients were calculated to determine the strength of the relationship.

None of the three research hypotheses were supported by the findings of the study. It was found that the native-born students did significantly better than the recent immigrants on three of the four measures of academic achievement. As a group, native-born students scored higher on the Coopersmith and Crandall inventories, although the comparisons by sex reached statistical significance only in the case of the self-concepts of male students. Finally, it was found that native-born students ranked higher than recent immigrants on the following family background factors: father's education level, mother's education level, father's present occupational status, and parental stress on education.

Separate investigations were undertaken to gather data on the geographic origins of recent immigrant families and the occupational status, in Mexico, of the fathers of recent immigrant students, prior to emigration to the United States. It was found that fully 83% of the recent immigrant students in the sample were born in Nogales, Sonora, just across the border from Nogales, Arizona. It was not possible to determine the occupational status of the fathers in Mexico, due to a high level of non-response to the question designed to elicit this information.

A correlational analysis was performed to determine which family background factors and acculturative stress variables were

related to the achievement of the recent immigrant and native-born students. It was found that the most consistent predictors of academic achievement were: (a) home usage of the English language, which was positively related to the achievement of females in both groups, (b) size of the family, which was negatively related to the achievement of all native-born students, (c) father's education level and present occupational status, which were correlated with the achievement of males in both groups, and (d) the student's self-concept, which was positively related to the achievement of all students in the sample.

Supplementary investigations revealed that there were no differences between the chronological ages of recent immigrants and native-born students, and that the length of schooling in the United States had no effect on the grades of recent immigrant students, although this factor was positively related to the scores obtained by recent immigrant males on the Reading Comprehension Test.

Conclusions and Discussion

The results of this study supported five general conclusions: (a) the native-born students in the sample attained higher levels of academic achievement than the recent Mexican immigrants, (b) a major factor influencing the low achievement of recent immigrant students appeared to be the lack of fluency in the English language, (c) the native-born students in the sample underwent less acculturative stress than the recent immigrants, (d) the native-born students in the sample ranked higher on the

family background variables investigated, and (e) there was no clear pattern of differences in the correlates of academic achievement between the two groups.

Achievement Levels

Contrary to predictions, the native-born students in the sample consistently achieved better than the recent immigrants. The differences between the two groups were large in absolute terms and highly significant statistically.

The findings of this study were not consistent with the results of previous research (Carter 1970, Kimball 1968, Anderson and Johnson 1971).

Although Carter presented no empirical data on the achievement levels of Mexican American students, he reported that educators throughout the Southwest believed that recent immigrants from Mexico achieved better than native-born Mexican Americans. Informal observations by the author of the present study indicated that educators in southern Arizona shared the generalized expectancy reported by Carter, but no attempt was made to measure the opinions and attitudes of teachers in Nogales, Arizona.

Kimball and Anderson and Johnson found that foreign-born Mexican American students achieved better than native-born Mexican Americans, but the results of their studies were not entirely comparable with the findings of the present study for two reasons. First, Kimball and Anderson and Johnson included all foreign-born Mexican Americans in their samples, and this study

focused on one subgroup of the foreign-born: students who had attended Mexican schools for at least two years before emigrating to this country. Thus many foreign-born students were excluded from the present investigation because they had attended schools in the United States since the first or second grade.

Second, there were important differences among the communities in which the three studies were conducted. Kimball did his research in the public schools of Los Angeles, California. Anderson and Johnson collected their data in a city of 50,000 people, half of them Mexican Americans, located 50 miles from the Mexican border. The present study was conducted in Nogales, Arizona, a small border town immediately adjacent to a much larger Mexican city.

Because of the conflicting results of these studies, further research is needed before any general conclusions can be reached concerning the relative achievement levels of recent immigrants and native-born Mexican Americans.

English Language Deficiencies

Serious deficiencies in the use of the English language appeared to have been a major factor handicapping the recent immigrant students. As a group, the recent immigrants scored a full stanine below the native-born students on the Reading Comprehension Test. They also scored below the native-born students on the Mathematics Computation Test, but the differences were much smaller and did not reach statistical significance.

Even though there was a positive correlation between length of schooling in this country and achievement on the Reading Comprehension Test, students with four or five years of schooling in the United States still did not achieve as well as the average native-born Mexican American on this test. Clearly, the results of this study did not support Carter's (1970, p. 21) assertion that recent immigrant students "seem to learn English rapidly and well."

Previous studies (Modiano 1968) have shown that early instruction in the home language of the child could have strong transfer effects to later schooling in another language. Although the results of the present study did not appear to be consistent with the existence of a strong transfer effect, there were many intervening variables, such as differences in socioeconomic level and discontinuities produced by emigration, which could have operated to attenuate the effects of early schooling in the child's native language. Therefore, no general conclusions concerning the transfer effect could be drawn from the findings of this study.

Family Background Factors

The hypothesis that recent immigrants have come from more urbanized, higher socioeconomic levels of Mexican society could not be fully tested within the format of this study. A complete evaluation of this hypothesis would have required that data be collected in Mexico for comparative purposes.

However, the inclusion of a Mexican control group probably would not have added significantly to the findings of this study, since the recent immigrants were at a disadvantage when compared with the native-born Mexican Americans. Students born in the United States ranked higher than recent immigrants on all family background variables investigated, including parental education level and father's occupational status.

Therefore, it appeared that differences in academic achievement between recent immigrant students and native-born Mexican Americans were related to differences in socioeconomic level, but not in the anticipated way. The findings of this study were consistent with the hypothesis that native-born students, rather than recent immigrants, were of higher socioeconomic status.

Acculturative Stress

The findings of this study also suggested that recent immigrants were at a psychological disadvantage, when compared with native-born Mexican Americans. The recent immigrant students in the sample had lower self-concepts and less confidence in their ability to exercise control over the environment. The effects of acculturative stress were strongest on the self-concepts of recent immigrant males. Therefore, the hypothesis that recent immigrants would adjust more easily to the school than native-born Mexican Americans was not supported by the results of this study.

Correlates of Achievement

An analysis of the correlates of academic achievement

failed to reveal a general pattern of differences between the recent immigrants and the native-born Mexican Americans. Except for the negative relationship between family size and student achievement, which was characteristic of the native-born students but not of the recent immigrants, the most significant patterns to emerge from this analysis were related to sex differences. The father's education level and his occupational status were positively related to the achievement of males in both groups, but were unrelated to the achievement of females. Home usage of the English language was positively associated with student achievement among females in both groups, but was not associated with the achievement of males.

Recommendations for Future Research

Since the results of this small scale study contradicted previous findings and cast doubt on the validity of what appears to be a generalized expectancy concerning the achievement of recent immigrants, it is important that larger scale studies be undertaken. It is recommended that the present study be replicated in urban and rural areas more remote from the Mexican border.

Future studies should also investigate the extent to which teachers actually believe that recent immigrants achieve better than native-born Mexican Americans. Does this belief vary from community to community? Does an expectancy concerning the performance of recent immigrants correlate with their academic achievement? It is recommended that further research in this

area should include measures of teacher attitudes in addition to the variables investigated in this study.

It is also recommended that future studies include several schools in a single community or in different cities so that variables such as the density of Mexican American enrollment and school climate can be investigated.

A final recommendation concerns the methodology employed in this study. It was evident that the students had some difficulty in answering questions concerning their family background. Therefore, it is recommended that in future studies the family background variables be assessed by questioning the parents themselves rather than the students.

Concluding Statement

It was anticipated that this study would provide empirical evidence of differences in academic achievement between recent Mexican immigrants and native-born Mexican Americans. It was found that these differences did exist, although not in the predicted direction. The native-born students in the sample attained higher levels of academic achievement than the recent immigrants.

It was also anticipated that the achievement differences would prove to be related to differences in the sociocultural and psychocultural variables which were investigated. This expectation was confirmed, in part, by the results of the study. It was found that the native-born students in the sample ranked higher than the recent immigrants on selected family background factors

and underwent less acculturative stress. However, it was also found that the two groups were relatively homogeneous with respect to the correlates of academic achievement. The single most consistent predictor of academic success for all students in the sample was a measure of acculturative stress: the student's self-concept.

The results of this study suggested that the role conflicts produced during the process of acculturation could have a depressing effect on the academic achievement of all Mexican American students. A major challenge facing curriculum developers at this time is to design new programs for the Mexican American learner which will alleviate, rather than accentuate, the effects of acculturative stress.

APPENDIX A

FAMILY BACKGROUND QUESTIONNAIRE

1. Where were you born? Mexico ___ United States ___

2. When were you born? Month _____ Day __ Year ____

3. In what city were you born? _____

   In what state were you born?_____

4. If you were born in Mexico:

   A. Where did you live for most of your life before coming to the United States?

      City _____ State _____

   B. How old were you when you and your family came to the United States? _____

   C. What was your father's job in Mexico before your family came to the United States? _____

5. How many brothers and sisters do you have? ____

   How many older brothers and sisters lived with you during the past 2 years? _____

   How many younger brothers and sisters lived with you during the past 2 years? _____

6. How many years did your father go to school?

   _____Grade school
   _____One or more years of high school
   _____Completed high school
   _____One or more years of college
   _____Completed college

7. How many years did your mother go to school?

_____ Grade school
_____ One or more years of high school
_____ Completed high school
_____ One or more years of college
_____ Completed college

8. What is your father's job at this time? _____

9. Does your mother work? Yes ___ No ___

If she works, what is her job? _____

10. What language do your parents use when they talk together?

_____ Spanish only
_____ Mostly Spanish
_____ Spanish and English
_____ Mostly English
_____ English only

11. What language do you use when you speak with your parents?

_____ Spanish only
_____ Mostly Spanish
_____ Spanish and English
_____ Mostly English
_____ English only

12. What language do you use when you speak with your brothers and sisters?

_____ Spanish only
_____ Mostly Spanish
_____ Spanish and English
_____ Mostly English
_____ English only

13. What kind of grades do your parents expect you to get?

_____ Excellent
_____ Above average
_____ Average
_____ Below average
_____ Poor

14. How would your parents feel if you left school to go to work at age 16?

_____ Strongly approve
_____ Approve
_____ Indifferent
_____ Disapprove
_____ Strongly disapprove

15. How much schooling does your family want you to complete?

_____ University
_____ Junior college
_____ Complete high school
_____ Leave school at 16

APPENDIX B

DESCRIPTIVE STATISTICS

Descriptive statistics for all 17 dependent and independent variables investigated in this study are presented in this Appendix. The tabular presentation of results is organized according to the three major categories of variables studied: (1) family background factors, (2) acculturative stress variables, and (3) measures of student achievement.

Family Background Factors

Size of family: The value of this variable is equal to the total number of children in the family.

Birth order: This variable is coded to a value of 1 for the oldest child; higher values indicate the second, third and succeeding children.

Father's and mother's education level: These variables range from a value of 1 (grade school education) to a value of 5 (university degree).

Occupational status: This variable ranges from a value of 1 (unskilled labor) to a value of 8 (professional).

Home language usage: This variable ranges from a value of 1 (exclusive use of Spanish in the home) to a value of 15 (exclusive use of English).

Parental stress on education: This variable ranges from a value of 3 to a value of 14. A high score indicates a high degree of parental stress on education.

Acculturative Stress Variables

Coopersmith Self-Esteem Inventory: Scores on the Coopersmith SEI can range from 0 to 100. The higher the score, the more positive the self-image of the student.

Crandall Intellectual Achievement Responsibility questionnaire: Scores on the I^+ and I^- subscales of the IAR can range from 0 to 17. The higher the score, the greater the student's sense of control over the environment. The total I score is the sum of the two subscales.

Measures of Student Achievement

Grade point averages: Two grade point averages are presented--the Academic Grade Point Average (including grades in English, social studies, mathematics and science) and the Total Grade Point Average. The grading scale ranges from 1 (A) to 5 (F).

Stanford Achievement Test: The scores on the Reading Comprehension and Mathematics Computation Tests of the SAT are expressed in stanines.

Family Background Factors

Group	Recent Immigrants n	Mean	SD	Min.	Max.	Native-Born n	Mean	SD	Min.	Max.
Size of Family										
Total	49	6.18	2.55	1.0	12.0	56	4.75	2.09	2.0	11.0
Males	25	6.12	2.80	1.0	12.0	28	4.57	2.15	2.0	11.0
Females	24	6.25	2.31	3.0	11.0	28	4.93	2.05	2.0	10.0
Birth Order of Student										
Total	45	2.58	1.36	1.0	6.0	56	2.52	1.60	1.0	7.0
Males	23	2.52	1.38	1.0	6.0	28	2.39	1.71	1.0	7.0
Females	22	2.64	1.36	1.0	5.0	28	2.64	1.50	1.0	7.0
Father's Education Level										
Total	42	1.91	1.27	1.0	5.0	52	2.60	1.24	1.0	5.0
Males	23	1.83	1.23	1.0	5.0	25	2.84	1.25	1.0	5.0
Females	19	2.00	1.33	1.0	5.0	27	2.37	1.21	1.0	5.0

Group	Recent Immigrants n	Mean	SD	Min.	Max.	Native-Born n	Mean	SD	Min.	Max.
Mother's Education Level										
Total	43	1.81	1.05	1.0	5.0	54	2.43	1.00	1.0	5.0
Males	23	1.87	1.18	1.0	5.0	26	2.62	1.02	1.0	5.0
Females	20	1.75	.91	1.0	3.0	28	2.25	.97	1.0	4.0
Father's Occupational Status in Mexico										
Total	24	2.08	1.10	1.0	4.0					
Males	14	2.14	.95	1.0	4.0					
Females	10	2.00	1.33	1.0	4.0					
Father's Present Occupational Status										
Total	44	2.66	1.54	1.0	8.0	50	3.80	1.78	1.0	8.0
Males	22	2.32	1.13	1.0	5.0	25	3.64	1.68	1.0	7.0
Females	22	3.00	1.83	1.0	8.0	25	3.96	1.90	1.0	8.0

Group	Recent Immigrants n	Mean	SD	Min.	Max.	Native-Born n	Mean	SD	Min.	Max.
Mother's Occupational Status										
Total	7	2.57	1.90	1.0	6.0	19	3.90	1.15	2.0	7.0
Males	1	1.00	-	-	-	10	3.80	1.03	2.0	6.0
Females	6	2.83	1.94	1.0	6.0	9	4.00	1.32	2.0	7.0
Home Language Usage										
Total	52	5.46	2.65	3.0	14.0	56	7.91	2.57	3.0	15.0
Males	26	4.65	2.19	3.0	10.0	28	8.04	2.66	3.0	15.0
Females	26	6.27	2.85	3.0	14.0	28	7.79	2.52	3.0	13.0
Parental Stress on Education										
Total	52	10.9	2.5	3.0	14.0	56	11.8	1.8	7.0	14.0
Males	26	10.8	2.8	3.0	14.0	28	12.1	1.7	8.0	14.0
Females	26	11.0	2.3	7.0	14.0	28	11.5	2.0	7.0	14.0

Acculturative Stress Variables

Group	Recent Immigrants n	Mean	SD	Min.	Max.	Native-Born n	Mean	SD	Min.	Max.
Coopersmith SEI										
Total	53	59.5	13.6	24.0	94.0	55	67.6	16.2	30.0	98.0
Males	27	59.1	15.1	24.0	94.0	28	71.6	13.8	42.0	98.0
Females	26	59.9	12.2	36.0	88.0	27	63.6	17.7	30.0	98.0
Crandall IAR: I^+ Subscale										
Total	53	11.9	2.3	7.0	17.0	56	12.9	2.6	7.0	17.0
Males	27	11.9	2.2	8.0	17.0	28	13.1	2.5	8.0	17.0
Females	26	11.9	2.5	7.0	16.0	28	12.8	2.7	7.0	17.0
Crandall IAR: I^- Subscale										
Total	53	10.4	2.2	5.0	15.0	56	11.2	2.8	5.0	17.0
Males	27	10.3	1.8	7.0	14.0	28	10.6	2.6	6.0	16.0
Females	26	10.4	2.7	5.0	15.0	28	11.8	2.9	5.0	17.0

Group	Recent Immigrants n	Mean	SD	Min.	Max.	Native-Born n	Mean	SD	Min.	Max.
Crandall IAR: Total I										
Total	53	22.3	3.5	16.0	31.0	56	24.1	4.5	15.0	32.0
Males	27	22.2	3.0	17.0	29.0	28	23.7	4.2	15.0	30.0
Females	26	22.5	4.1	16.0	31.0	28	24.5	4.8	15.0	32.0
Measures of Student Achievement										
Academic Grade Point Average										
Total	59	3.52	.68	1.75	5.00	59	2.78	.81	1.25	4.75
Males	31	3.72	.63	2.00	5.00	29	2.96	.73	1.75	4.75
Females	28	3.30	.67	1.75	4.25	30	2.62	.87	1.25	4.75
Total Grade Point Average										
Total	59	3.19	.67	1.43	5.00	59	2.50	.72	1.14	4.43
Males	31	3.32	.68	1.71	5.00	29	2.62	.65	1.43	4.43
Females	28	3.06	.66	1.43	4.14	30	2.38	.78	1.14	4.00

Group	Recent Immigrants n	Mean	SD	Min.	Max.	Native-Born n	Mean	SD	Min.	Max.
SAT Reading Comprehension										
Total	55	3.02	1.25	1.0	7.0	57	4.09	1.15	2.0	8.0
Males	29	2.83	1.20	1.0	7.0	27	4.00	1.11	2.0	6.0
Females	26	3.23	1.31	1.0	6.0	30	4.17	1.21	2.0	8.0
SAT Mathematics Computation										
Total	55	3.46	1.40	1.0	7.0	57	3.86	1.53	1.0	8.0
Males	29	3.35	1.33	1.0	6.0	27	3.37	1.34	1.0	6.0
Females	26	3.58	1.47	1.0	7.0	30	4.30	1.60	1.0	8.0

LIST OF REFERENCES

Anderson, James G. and Evans, Francis B. Achievement and the achievement syndrome among Mexican-American youth. In Paul Kutche (ed.), Measuring sociocultural change. Boulder, Colo.: Colorado Associated University Press, 1969.

_____ and Johnson, William H. Sociocultural determinants of achievement among Mexican-American students. Las Cruces, N.M.: Educational Resources Information Center, New Mexico State University, 1968. (ERIC Document Reproduction Service No. ED 017 394)

_____ and Johnson, William H. Stability and change among three generations of Mexican-Americans: Factors affecting achievement. American Educational Research Journal, 1971, 8, 285-309.

Battle, Esther and Rotter, Julian B. Children's feelings of personal control as related to social class and ethnic group. Journal of Personality, 1963, 31, 482-490.

Beals, Ralph L. Some value changes in modern Mexico. In Robert A. Manners (ed.), Process and pattern in culture: Essays in honor of Julian H. Steward. Chicago: Aldine, 1964.

Born, David O. Psychological adaptation and development under acculturative stress: Towards a general model. Social Science and Medicine, 1970, 3, 529-547.

Brookover, Wilbur B., Thomas, Shailer, and Paterson, Anne. Self-concept of ability and school achievement. Sociology of Education, 1964, 37, 271-278.

Broom, Leonard and Shevsky, Eshref. Mexicans in the United States: A problem in social differentiation. Sociology and Social Research, 1952, 36, 150-158.

Burger, Henry G. "Ethno-pedagogy": A manual in cultural sensitivity, with techniques for improving cross-cultural teaching by fitting ethnic patterns (Rev. ed.). Albuquerque, N.M.: Southwestern Cooperative Educational Laboratory, 1971.

Cardenas, Luís. The municipality of northern Mexico. El Paso, Texas: Texas Western Press, 1963.

Carter, Thomas P. The negative self-concept of Mexican-American students. School and Society, 1968, 96, 217-219.

_____. Mexican-Americans in school: A history of educational neglect. New York: College Entrance Examination Board, 1970.

Casavantes, Edward J. A new look at the attributes of the Mexican-American. Albuquerque, N.M.: Southwestern Cooperative Educational Laboratory, 1969. (ERIC Document Reproduction Service No. ED 028 010)

Chilcott, John H. Some perspectives for teaching first generation Mexican-Americans. In John H. Chilcott, Norman C. Greenberg, and Herbert B. Wilson (eds.), Readings in the socio-cultural foundations of education. Belmont, Cal.: Wadsworth, 1968.

Coleman, James S., Campbell, Ernest Q., Hobson, Carol L., McPartland, James, Mood, Alexander J., Weinfeld, Frederick D., and York, Robert L. Equality of educational opportunity. Washington, D.C.: United States Office of Education, 1966.

Coopersmith, Stanley T. The antecedents of self-esteem. San Francisco: Freeman, 1967a.

_____. Instructions for scoring and interpreting the self-esteem inventory (SEI). Unpublished manuscript, University of California-Davis, 1967b.

Crandall, Virginia C., Katkovsky, Walter, and Crandall, Vaughn J. Children's beliefs in their own control of reinforcements in intellectual-academic situations. Child Development, 1965, 36, 91-109.

De Blassie, Richard and Healy, Gary W. Self-concept: A comparison of Spanish-American, negro and anglo adolescents across ethnic, sex and socioeconomic variables. University Park, N.M.: New Mexico State University, 1970. (ERIC Document Reproduction Service No. ED 037 287)

De León, Marcos. Wanted: A new educational philosophy for the Mexican-American. California Journal of Secondary Education, 1959, 34, 398-402.

Evans, Francis B. and Anderson, James G. The psychocultural origins of achievement motivation: The Mexican-American family. Sociology of Education, 1973, 46, 396-416.

Friend, Ras R. The relationship between academic achievement and locus of control in middle and lower socioeconomic level black, white and Mexican-American high school students in an urban setting (Doctoral dissertation, University of Houston, 1972). Dissertation Abstracts International, 1973, 34, 89A-90A. (University Microfilms No. 73-15, 711)

Gamio, Manuel. Mexican immigration to the United States: A study of human migration and adjustment. Chicago: University of Chicago Press, 1930a.

_____. Numero, procedencia y distribucion geografico de los inmigrantes Mexicanos en los Estados Unidos. [Number, origin, and geographic distribution of the Mexican immigrants in the United States] Mexico City: Talleres Graficos Editorial, 1930b.

García, Ernest. Chicano cultural diversity: Implications for competency-based teacher education. In William A. Hunter (ed.), Multicultural education through competency-based teacher education. Washington, D.C.: American Association of Colleges of Teacher Education, 1974.

Goodenough, Ward H. Cooperation in change: Anthropological approaches to community development. New York: Russell Sage Foundation, 1963.

Gordon, C. Wayne, Schwartz, Audrey J., Wenkert, Robert, and Nasatir, David. Educational achievement and aspirations of Mexican-American youth in a metropolitan context. Los Angeles: Center for the Study of Evaluation of Instructional Programs, University of California at Los Angeles, 1968. (ERIC Document Reproduction Service No. ED 028 012)

Grebler, Leo, Moore, Joan, and Guzman, Ralph. The Mexican-American people: The nation's second largest minority. New York: Free Press, 1970.

Hepner, Ethel M. Self-concept, values and needs of Mexican-American underachievers, or (must the Mexican-American child adopt a self-concept that fits the American school?). Paper presented at the American Psychological Association National Convention, Miami, September 1970. (ERIC Document Reproduction Service No. ED 048 954)

Hernández, Luís F. The culturally disadvantaged Mexican-American student: Part I. Journal of Secondary Education, 1967, 42, 59-65.

Hernández, Norma G. Variables affecting achievement of middle school Mexican-American students. Review of Educational Research, 1973, 43, 1-39.

Hofstee, E. W. Some remarks on selective migration. The Hague: Nijhoff, 1952.

Jersild, Arthur R. In search of self: An exploration of the role of the school in promoting self-understanding. New York: Teachers College Press, 1952.

Justin, Neal E. The relationship of certain socio-cultural factors to the academic achievement of male Mexican-American high school seniors (Doctoral dissertation, University of Arizona, 1969). Dissertation Abstracts International, 1969, 30, 1915A. (University Microfilms No. 69-19, 260)

Kahl, Joseph A. The measurement of modernism: A study of values in Brazil and Mexico. Austin, Texas: University of Texas Press, 1968.

Kimball, William L. Parental and family influences on academic achievement among Mexican-American students (Doctoral dissertation, University of California at Los Angeles, 1968). Dissertation Abstracts 1968, 29, 1965A. (University Microfilms No. 68-16, 550)

Kluckhohn, Florence R. and Strodtbeck, Fred L. Variations in value orientations. Evanston, Ill.: Roe Peterson, 1961.

Kroeber, Alfred L. Anthropology: Race, language, culture, psychology, pre-history (2nd ed). New York: Harcourt, Brace, 1948.

Lavin, David E. The prediction of academic performance: A theoretical analysis and review of research. New York: Russell Sage Foundation, 1965.

Lewis, Oscar. Five families: Mexican case studies in the culture of poverty. New York: Basic Books, 1959.

_____. La vida: A Puerto Rican family in the culture of poverty--San Juan and New York. New York: Vintage Books, 1968.

Linton, Thomas H. Sociocultural characteristics and alientation from school among Mexican-American and anglo 6th grade students (Doctoral dissertation, New Mexico State University, 1970). Dissertation Abstracts International, 1970, 31, 382A. (University Microfilms No. 70-02, 872)

Madden, Richard, Gardner, Eric F., Rudman, Herbert C., Karlsen, Bjorn, and Merwin, Jack C. Stanford achievement test, advanced battery, norms booklet, form A. New York: Harcourt, Brace, 1973.

Madsen, William. Mexican-Americans of South Texas. New York: Holt, Rinehart and Winston, 1964.

Modiano, Nancy. National or mother tongue in beginning reading: A comparative study. Research in the Teaching of English, 1968, 2, 32-43.

McDavid, John. Some relationships between social reinforcement and scholastic achievement. Journal of Consulting Psychology, 1959, 23, 151-154.

Nie, Norman H., Bent, Dale H., and Hull, C. Hadlai. Statistical package for the social sciences. New York: McGraw-Hill 1970.

Palomares, Geraldine D. The effects of stereotyping on the self-concept of Mexican-Americans. Albuquerque, N.M.: Southwestern Cooperative Educational Laboratory, 1970. (ERIC Document Reproduction Service No. ED 056 806)

Parsons, Talcott. The social system. Glencoe, Ill.: Free Press, 1951.

Peñalosa, Fernando. The changing Mexican-American in southern California. Sociology and Social Research, 1967, 51, 405-417.

Ramírez, Manuel. Cultural democracy: A new philosophy for educating the Mexican American child. National Elementary Principal, 1970, 50(2), 45-46.

Ramírez, Manuel. The relationship of acculturation to educational achievement and psychological adjustment in Chicano children and adolescents: A review of the literature. El Grito, 1971, 4(4), 21-29

Redfield, Robert, Linton, Ralph, and Herskovits, Melville J. Memorandum for the study of acculturation. American Anthropologist, 1936, 38 149-152.

Reeder, Thelma A. A study of some relationships between level of self-concept, academic achievement, and classroom adjustment (Doctoral dissertation, North Texas State University, 1955). Dissertation Abstracts, 1955, 15, 2472. (University Microfilms No. 00-14, 371)

Rodríguez, Armando. Education for the Spanish-speaking: Mañana in motion. National Elementary Principal, 1970, 49(4), 42-56.

Rodríguez, Valerio S. Mexican-American pupils' self-concept in public elementary schools (Doctoral dissertation, United States International University, 1972). Dissertation Abstracts International, 1972, 33, 2773A. (University Microfilms No. 72-20, 550)

Rogers, Dorothy. Personality traits and academic achievement among Mexican-American students (Doctoral dissertation, University of Texas at Austin, 1971). Dissertation Abstracts International, 1972, 33, 2179A. (University Microfilms No. 72-15, 823)

Romano, Octavio. The historical and intellectual presence of Mexican-Americans. El Grito, 1969, 2(2), 32-46.

Rotter, Julian B. Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs, 1966, 80(1, Whole No. 609).

_____, Seeman, Melvin, and Liverant, Sidney. Internal versus external control of reinforcement: A major variable in behavior theory. In Neville F. Washburne (ed.), Decisions, values and groups (Vol. 2). London: Pergamon Press, 1962.

Saunders, Lyle and Olen, Leonard. The wetback in the lower Rio Grande Valley of Texas. Austin, Texas: University of Texas Press, 1951.

Schwartz, Audrey J. A comparative study of values and achievement: Mexican-American and anglo youth. Sociology of Education, 1971, 44, 438-462.

Social Science Research Council. Acculturation: An exploratory formulation. American Anthropologist, 1954, 56, 973-1002.

Spindler, George D. Sociocultural and psychological processes in Menomini acculturation. Berkeley: University of California Press, 1955.

_____. Psychocultural adaptation. In Edward Norbeck, Douglass Price-Williams, and William McCord (eds.), The study of personality: An interdisciplinary appraisal. New York: Rinehard and Winston, 1968.

_____. Education and cultural process: Towards an anthropology of education. New York: Holt, Rinehart and Winston, 1974.

_____ and Spindler, Louise. Psychology in anthropology: Applications to culture change. In Sigmund Koch (ed.), Psychology: A study of a science (Vol. 6). New York: McGraw-Hill, 1963.

Stevens, Peter H. An investigation of the relationship between certain aspects of self-concept behavior and students' academic achievement (Doctoral dissertation, New York University, 1956). Dissertation Abstracts, 1956, 16, 2531. (University Microfilms No. 00-18, 067)

Thomas, Dorothy S. Research memornadum on migration differentials. New York: Social Science Research Council, 1938.

Turner, Ralph. The social context of ambition: A study of high school seniors in Los Angeles. San Francisco: Chandler, 1964.

Wallace, Anthony F. C. Culture and personality (2nd ed.). New York: Random House, 1970.

White, Leslie A. The concept of culture. American Anthropologist, 1959, 61, 227-251.

Wilson, Herbert B. Evaluation of the influence of educational programs on Mexican-Americans. Paper presented at the National Conference on Educational Opportunities for Mexican-Americans, Las Cruces, New Mexico, 1968. (ERIC Document Reproduction Service No. ED 016 561)

Zintz, Miles V. Education across cultures. Dubuque, Iowa: W. C. Brown Book Co., 1963.

Zirkel, Perry A. Self-concept and the "disadvantage" of ethnic group membership and mixture. Review of Educational Research, 1971, 41, 211-225.